

The final version of this article was published here:

Goodbun J., Till J. and Iossifova D. (2012) Introduction: Themes of scarcity. In: Goodbun J., Till J. and Iossifova D. (eds) *Scarcity: Architecture in an age of depleting resources*. London: Wiley, 8-15.

<http://onlinelibrary.wiley.com/doi/10.1002/ad.1421/abstract>

INTRODUCTION

THEMES OF SCARCITY

By Jon Goodbun, Jeremy Till and Deljana Iossifova

We are today, according to the UK government's chief scientist John Beddington, facing a 'perfect storm' of social, political, economic and ecological dimensions. The full extent and severity of our current conditions is yet to be determined, but one thing seems certain: our foreseeable futures will not be like our recent pasts. Leading analysts of all the major resource domains – water, food, material resources and energy – tell us that our global industrial and financial models, based largely on the assumption of endless growth, are taking human societies to the brink of a series of chronic shortages and insecurities.¹ Some of these are determined by real natural limits in terms of diminishing quantities of available mineral resources, ranging from metals (rare or otherwise) to oil: a condition often referred to as 'peak everything'. Other scarcities are based upon the uneven management of naturally produced resources such as water, timber and food (both livestock and agriculture), often with a transfer of real metabolic value from the poor to the rich areas of the globe. Industrial economies are also externalising – in a generally catastrophic manner – all kinds of waste sinks, also typified by flows of waste from rich to poor regions.

Of all the mounting evidence, one of the most compelling is the Stockholm Resilience Centre's notion of planetary boundaries.² Of the nine the centre has identified, three have already been breached and three are close to the threshold. In all of these cases, existing systemic stresses are expected to transform and intensify in unpredictable ways as a result of climate disruption and ecosystem shifts.

Scarcity as a concept is a profoundly complex and indeed problematic term. We use it here cautiously, as a heuristic device, and as a means of grasping and collecting together a range of responses to the complex contradictions of our socio-ecological condition today, and the possible implications of these responses for architectural and urban design. Our intention is to address what urban geographer and political theorist David Harvey has described as 'the environmental question', defined as a problematic with simultaneously ecological, social, cultural and political dimensions. Harvey has noted that: 'If you think that you can solve the environmental question, of global warming and all that kind of stuff, without actually confronting the whole question of who determines the value structure ... then you have got to be kidding yourself.'³ He is calling for us not just to deal with surface effects, but the underlying causes. Scarcity is a term that bridges economic and ecological domains, and perhaps enables us to grasp something of this 'value structure'.

While having a commonsense meaning as a chronic lack or shortage, scarcity is far from neutral or uncontested. Scarcity does more than describe an empirical account of natural and human resources; as soon as the term enters economic or political discourse, it takes on ideological forms – it naturalises and obscures the social and political aspects of resource allocation. Typical of this was Reverend Malthus' attempt to argue it as an inevitable and natural condition, in which, in his case, projected population growth would outstrip resource development, leading to food shortages, hunger and social conflict. Carrying a strong appeal to ruling elites, Malthus' 'objective' view singled out the poor as inferior and responsible for disproportionate population growth and prepared the ground for 'scientific' ideas and theories like Social Darwinism, eugenics and other deeply ideological programmes of population control.

Following Malthus, scarcity has been a central term of neoclassical economics,⁴ of attempts to theorise and describe what markets are and how they work. In this sense, it has been appropriated as a part of a form of knowledge that sees and reproduces the world in the terms of capitalist market economics and its priorities. For this reason alone the concept is rightly treated with much suspicion. Interestingly, the term causes distress at both ends of the political spectrum. Rightwing and libertarian thinkers hate the idea that limits can be placed upon development, and see the concept of scarcity as an attempt to introduce moralising attempts to restrict human freedom, specifically the freedom to do what we want with the non-human environment. Whatever one thinks of rightwing libertarianism in general, there is much substance to their claim (mirrored incidentally by many on the left) that any attempt to understand the order of things through the concept of scarcity always carries a hidden neo-Malthusian content of limit and control.

The concept of scarcity also raises many different questions on the left, and not just because it is a key term in defining capitalist economics. The left has historically asserted that scarcity is produced by capitalism, and that the uneven distribution of resources is primarily a political question. But beyond that, some on the left have suggested that unlimited material abundance was the aim of their project: an overly simplistic position which often rejects any discussion of limits without a great deal of critical ecological reflection.

Scarcity most obviously throws up a challenge to received notions of growth. If neo-Malthusian conceptions of limits defined by population growth have been thoroughly discredited, there remains nonetheless a resource-use question determined by economic growth: Can we really have continual growth on a fundamentally bounded planet? Capitalism is defined by growth, and cannot exist without it; we see around us today the hardship caused by low growth (not even no or negative growth). In order to understand the nature of this challenge, we need to comprehend the underlying forces at work.

Capitalist growth is driven by the inherent dynamics of an interlinked system. Marx showed in detail how competition drives this process of growth, how competition necessarily means that an element of profit must always be reinvested as capital by companies in order to simply maintain their position in the market, in a process that necessarily 'chases the capitalist over the face of the earth'. Others have emphasised the expansionary role of our particular form of money production. The global economy is dominated by a particular form of money: the debt that banks create in the form of interest-bearing loans. This form of money, as ecological economists such

as Richard Douthwaite⁵ and the New Economics Foundation (NEF)⁶ have noted, feeds in important ways a dynamic that Marx identified in which more money must be constantly conjured into existence in order to pay back existing loans – a process that drives, in a thoroughly interdependent manner, both the spiralling quantities of global debt and economic growth.

These issues concerning money and growth have entered the domain of sustainable design theory in recent years. Work by think tanks such as the NEF has been widely promoted by design theorists such as Ezio Manzini (see pp xx–xx of this issue) and elsewhere by John Thackara.⁷ Typically, these projects look at how grass-roots design might develop processes that generate new forms of money and exchange, such as time-sharing schemes and micro-financing. More broadly, urban and regional movements – notably the Transition Towns movement initiated by Rob Hopkins (see pp xx–xx) – have returned to explore the ways that developing new local currencies can facilitate the development of new 'sustainable' forms of economic activity. While many on the critical left scoff at such initiatives as just the latest wave of reformist confusion – and they are not completely wrong – there remains an important core to this particular strand of design research. Indeed, the NEF's Great Transition project remains one of the most provocative and far-reaching proposed reforms of the global banking system, seeing this project as thoroughly interconnected with the broader questions of resource scarcity contained herein. Some of these arguments are also developed in the economist Tim Jackson's seminal work on achieving prosperity, both social and environmental, without growth.⁸

Most of the recent theoretical explorations of scarcity have pointed to its contested and constructed nature, arguing that it exceeds arguments of limits and situating it in a much broader political and economic framework. Thus the collection of essays *'Limits to Scarcity: Contesting the Politics of Allocation'*, edited by Lyla Mehta, concludes that: 'As the contributors to the volume repeatedly demonstrate, there is plenty of food, water and energy on this planet to meet the requirements of a population that demographers project will peak at just below 9 billion.'⁹ In this issue of *AD*, Tim Morton brilliantly argues that scarcity has to be seen as more than just a set of limits: 'If we let go of limits, we also let go of the vague *apeiron* of infinity and embrace finitude: not as scarcity or as limit, but as coexistence in the disquieting flux of time' (pp xx–xx).

The main question that this issue addresses is what might be the effects of these constructions of scarcity on architecture and the production of the built environment. Does anything interesting happen when we ask about scarcity in the built environment? It can be argued that mainstream architecture, urbanism and design practices are complicit in, and indeed primary vectors for, the very forces that are causing conditions of scarcity; in the pursuit of growth and progress, resources are diminished, and in the entanglement with the market, architecture spatialises and materialises uneven development. This is shown most clearly in Arna Mathiesen's article on Reykjavik (pp xx–xx), in which she describes the extraordinary post-crash landscape in which scarcities bump up against the scars of rampant development. Edward Robbins and Christian Hermansen Cordua (pp xx–xx) trace the links between social housing provision and economic growth in the example of Norway, and Andreas Rumpfhuber, Michael Klein and Georg Kolmayr (see p XX) explore the role of scarcity in the case of housing provision in Vienna.

In recent years the dominant discourse for exploring problems and solutions to the question of limits has worked around the concept of 'sustainability'. But, as has been increasingly widely observed, this concept is deeply problematic: sustaining what? A modified form of existing consumer capitalism and the uneven and profoundly unjust power relations that it is built upon too often appear to be the real, if often unintended, agenda. Instead, we suggest that the challenges confronting us – if engaged with through the development of new 'conceptual tools' – have the capacity to completely reconfigure design practices in new, radically post-sustainable directions. Some of these tropes can be identified in the articles in this issue. Jeremy Till and Tatjana Schneider call for a move away from the object and into issues of what they term 'spatial agency', and activist-inspired intervention into the processes of production (see pp xx–xx). Jody Boehnert argues that what she terms 'ecological literacy' is a necessary premise for understanding the complexity of the environmental conditions that face us (pp xx–xx), and Steve Parnell asks us to learn from episodes in the 1960s and 1970s, when ideas of expendability came up against the realities of scarcity, in particular within the emerging ecological movement (pp xx–xx).

Scarcity, in all its complexity, throws up new arenas for architects and designers to cope with that avoid the sometimes simplistic discourse of sustainability. Too often sustainability falls back on technical solutions in the belief that the technologies and industries that humans have already invented, let alone what might be developed in the future, are already more than capable of providing abundance for all. With architecture so often framed as a technocratic discipline, it is perhaps not surprising that responses to the perceived dangers of scarcity revolve around technical fixes. This is an approach that holds out the promise of escape while leaving the underlying conditions untouched. But issues of scarcity, and in particular its ideological and very real construction, demand other forms of intervention. Architectural, urban, planning and design research has – as we shall see in this issue – begun to suggest some new ways of operating: developing innovative forms of analysis of global flows and scarcities, new forms of ecological thinking that look at interrelationships, and design practices that are more socially activist in orientation.

Several authors in this edition – Kate Soper (pp xx–xx), Alejandro Zaera-Polo (pp xx–xx), and Daliana Suryawinata and Winy Maas of The Why Factory (pp xx–xx) – raise the question of how we might socially redefine abundance. Of course this question has long been a topic within many traditions of the green movement, although often with a puritanical or nostalgic back-to-the-past aspect. Here, however, we find very contemporary questions that have also been addressed in other work by some of our contributors – notably perhaps in Ezio Manzini's *Sustainable Everyday* research.¹⁰ Can we develop products and buildings that do not have a designed-in obsolescence? Can we develop local economies of repair rather than redundancy? Can we, in Theodore Adorno's memorable phrase, imagine a society wherein objects 'no longer suffer humiliation at the hands of men'?¹¹

The global urban population now accounts for more than 50 per cent of humanity,¹² and several of the pieces in this issue consider these questions at an urban scale. Michael Sorkin on New York (pp xx–xx), Douglas Spencer in China (pp xx–xx), Erik Swyngedouw and Maria Kaika in terms of urban metabolism (pp xx–xx), Ulysses Sengupta and Deljana Iossifova on regional systems (pp xx–xx), and Jon Goodburn reflecting upon Gregory Bateson's advice to New York planners (pp xx–xx).

A useful subset of urban dynamics are food systems, the intertwining of which with contemporary processes of globalisation and urban growth, has been well documented by Carolyn Steel in her seminal 2008 book *Hungry City: How Food Shapes Our Lives*.¹³ The questions of food production and the problems associated have received a great deal of attention in recent years, and it is therefore no surprise that several authors in this issue are able to take on these questions as developed design research: Andre Viljoen and Katrin Bohn (pp xx-xx) consider case studies from both Cuba and the US, and their own Continuous Productive Urban Landscapes (CPULs) initiatives, while the New York architect Michael Sorkin documents his radical new urban design research into the possibility of making New York a self-sufficient metabolism.

Such urban questions are so clearly at the nexus of so many problems that we face, and yet the tools at our disposal are so clearly inadequate to the task at hand. As Einstein famously noted – and McDonough and Braungart begin to propose for design in their *Cradle to Cradle* manifesto¹⁴ – it is not a good idea to use the kind of thinking that caused a given problem to solve a given problem. This, then, is not an issue of *AD* that provides examples of solutions; deceiving ourselves about our real agency is a pathology that architecture needs to shake free of. Focusing on asking questions through the term 'scarcity' does not provide any answers, but given the inadequacy of existing concepts active in thinking about the built environment, such as sustainability, it does allow some new ways of seeing what is wrong.

Our argument is that scarcity, whether conceived of as an actual limit on resources, or as a socially constructed condition of uneven social or global distribution of resources, has been largely absent as a critical concept in recent mainstream Western architectural and design discourse. This is perhaps not surprising: the architectural profession is set up to serve the needs of the global rich. Yet, the emerging conditions of scarcity are rich in possibilities for the design professions and design research. In 2003, the graphic designer Bruce Mau founded the Institute without Boundaries,¹⁵ based upon Richard Buckminster Fuller's famous call for a new kind of designer, a 'synthesis of artist, inventor, mechanic, objective economist, and evolutionary strategist'.¹⁶ Architects and designers face new challenges and opportunities, and in this issue we share something of Mau's approach.

Architects as professionals often wait for commissions driven by others. In these situations we might expect them to be increasingly marginalised from decisions, or faced with design challenges regarding how to use materials more efficiently. But there are other possibilities. At the very least, designers might solve problems using fewer resources. Better is to engage critically in the wider context of scarcity: articulating the existing uneven allocation of resources, finding a different kind of aesthetics, or using architectural and design techniques to raise a different discussion, one that cannot be articulated through dominant discourses of economics. Thinking through scarcity and design allows a reconsideration of how things are made, how they are distributed, how they are used, and what happens at the end of their use. We are compelled to design processes as much as objects, systems as much as brands.

Some papers, when read together, suggest a move beyond both scarcity and conventional notions of design and planning. Benedict Singleton (pp xx-xx), Ezio Manzini, and Goodbun and Jaschke's piece on new materialism (pp xx-xx) and Goodbun's piece on Gregory Bateson, all develop what might be broadly described as a new materialist approach, in that they emphasise the need to revisit the very possibility of design and planning. Systems- and ecological-based analyses help us to

identify the problems, but traditional forms of management that have emerged from these disciplines have often been vectors for the kind of centralised management models that seem so anachronistic today. There are other ways of approaching these questions, and Manzini and Goodbun both argue for a very different kind of approach, based in what Manzini describes as an error-friendly design method, and Goodbun finds in Bateson's critique of cybernetics.

We find ourselves, at the beginning of the 21st century, in a paradoxical world. Our capacity to produce and meet all of our needs has never been greater, yet inequality and poverty abounds, and what we do produce all too often seems to diminish our long-term wealth. Thinking about scarcity in the built environment was an experiment, a test, an attempt to explore the different carrying capacities of existing concepts and their scope for grasping contemporary conditions. It is not at all clear that scarcity will ultimately prove any better a concept for trying to grasp the sheer extent of the problems and opportunities contained within the 'environmental question' broadly conceived than sustainability or any other recent term. Indeed, our problem is precisely that we do not have a conceptual and critical language up to the job. The problem, certainly as far as the anthropologist and ecologist Gregory Bateson was concerned, is radically epistemological, in that 'all of the world's problems are the result of the difference between how nature works, and the way people think'.¹⁷

Given that, how best to proceed? Ultimately this issue asks: If the *homo economicus* that is defined by capitalist conceptions of scarcity is defined as always wanting abundance, can post-sustainable and post-scarcity design imagine and project a different way of becoming human?

NOTES

1. Of the many sources for this information on depletion, one of the most comprehensive is the 'Ecological Footprint Atlas', Global Footprint Network, 2010. Available online at www.footprintnetwork.org/images/uploads/Ecological_Footprint_Atlas_2010.pdf
2. For more information on planetary boundaries, visit the Stockholm Resilience Centre: www.stockholmresilience.org/planetary-boundaries. The three boundaries breached are: climate change, biodiversity loss, and nitrogen levels. The three close to the boundary are: ozone depletion, ocean acidification and land use.
3. David Harvey, *Reading Marx's Capital, Vol 1, Lesson 1*. Video available online at www.davidharvey.org
4. For instance, Robbins' famous definition that: 'economics ... is concerned with that aspect of behaviour which arises from the scarcity of means to achieve given ends.' See Lionel Robbins, *An Essay on the Nature and Significance of Economic Science*, Macmillan & Co (London), 1932, p 40.
5. Richard Douthwaite, *The Growth Illusion*, New Society Publishers (Gabriola Island, BC), 1992.
6. See www.neweconomics.org.
7. See Thackara's website: www.doorsofperception.com

8. Tim Jackson, *Prosperity with Growth*, Routledge (London), 2009
9. Lyla Mehta, *The Limits to Scarcity: Contesting the Politics of Allocation*, Earthscan (London and Washington DC), 2010.
10. www.sustainable-everyday.net
11. Theodore Adorno, 'Functionalism Today', in Neil Leach (ed), *Rethinking Architecture*, Routledge (London), 1997, p 17.
12. Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, 'World Population Prospects: The 2006 Revision' and 'World Urbanization Prospects: The 2007 Revision': see <http://esa.un.org/unup>
13. Carolyn Steel, *Hungry City: How Food Shapes Our Lives*, Chatto & Windus (London), 2008.
14. William McDonough and Michael Braungart, *Cradle to Cradle: Remaking the Way we Make Things*, North Point Press (New York), 2002.
15. See www.institutewithoutboundaries.com
16. R Buckminster Fuller, *Ideas and Integrities*, Prentice Hall (Engelwood Cliffs, NJ), 1963.
17. Quote from one of Bateson's seminars, as cited in the film directed by his daughter Nora Bateson: *An Ecology of Mind: A Daughter's Portrait of Gregory Bateson*, 2010.