

An aerial, high-angle view of a city grid, likely New York City, with buildings and streets visible. Overlaid on this background are large, semi-transparent letters in various colors (orange, yellow, red) that spell out 'URBAN' in the top row and 'PLAYS' in the bottom row. The letters are stylized and have a slight 3D effect. In the top right corner, there is a white logo consisting of a triangle with a circle inside it.

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LOFTY IDEALS
TO SHOCKING
REALITIES

URBAN

PLAYS

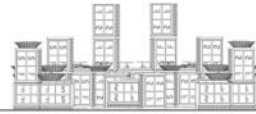
PLAYS

PLAYS

Guest-edited by
Marcus White
and Jane Burry



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Marcus White and Jane Burry



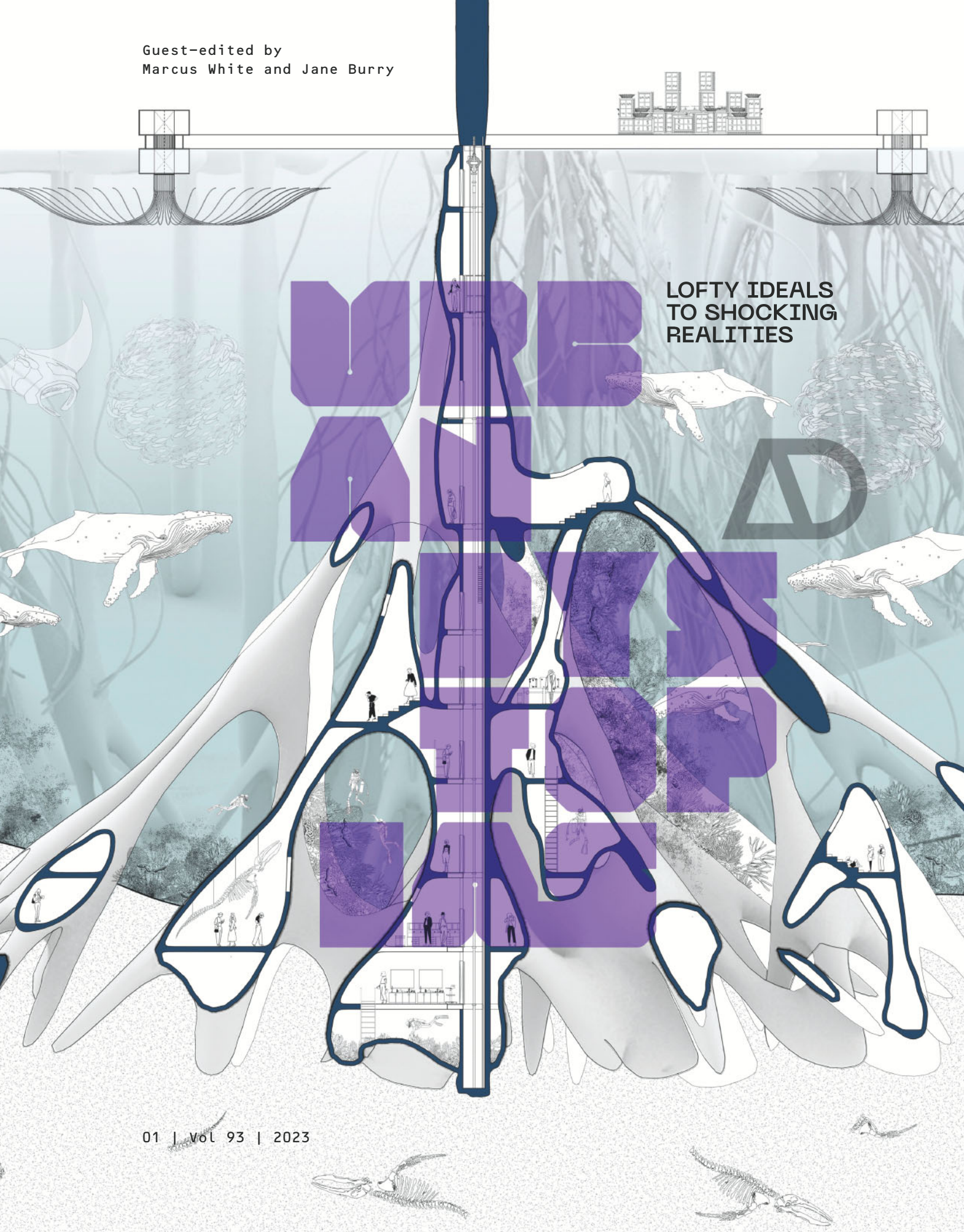
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This issue of Δ explores the dichotomy between idealised visions for the design of urban settlements and the potentially shocking realities which may emerge from those same impulses and intentions

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Front cover


Harrison and White with Flood Slicer, Implementing the Rhetoric, Footscray, Victoria, Australia, 2010. © Harrison and White with Flood Slicer.

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Shi Percy Pan, Yingna Celina Sun and Jiaao Wayne Wong, The Great Ocean Road is Crying in Tears of Plastic, Studio 05, Melbourne School of Design, University of Melbourne, Australia, 2021. Shi Percy Pan, Yingna Celina Sun and Jiaao Wayne Wong

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Kundi Shu, Kachung Lo and Xiufeng Li, Rhizomatic bridge as a hope in Peturbanism: Aquaculture and Aquatics scenario, Hope in Peturbanism – Possible Future of Great Ocean [Road?] CDE Studio 05, Melbourne School of Design, University of Melbourne, Australia, 2021. © Kundi Shu, Kachung Lo and Xiufeng Li

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ABOUT THE
GUEST-EDITORS

MARCUS WHITE AND JANE BURRY



Longstanding academic colleagues Marcus White and Jane Burry have worked to knit together the tectonics of architecture and a deeper engagement with the urban realm, adopting accessible and applicable technologies and digital data to deepen the contextual grounding. At the Swinburne University of Technology, where White is Professor of Architecture and Urban Design, and Burry is Professor and Dean of the School of Design and Architecture, they have been instrumental in co-authoring a unique combined Master's programme in architecture and urban design. Proponents of the integration of education with research and practice, White is a partner in the award-winning architecture practice Harrison and White (HAW), while Burry's research leverages her experience as a project architect in the technical team at the Sagrada Família in Barcelona.

Both share a deep interest in speculative futures, including micro-scaled digital fabrication inquiry; investigating sonic and thermal experience at the interface of built fabric, people and air; innovation in construction methods; and macro-scaled explorations of radical urban propositions imagining new ways of living. Their work is conducted through their research within the Spatio-Temporal Research Urban Design and Architecture Laboratory (STRÜDAL) at Swinburne's Centre for Design Innovation. Their enduring commitment to the exploration of computationally enabled design futures exposes them to the endlessly divergent possibilities, some markedly dark, that artificially intelligent and algorithmic urbanisms can invoke.


White's work focuses on research for and through design, using emerging technology and data to design liveable cities. He is the creator of the pedestrian network analysis tool www.PedestrianCatch.com, and led the City of Melbourne Sunlight Public Open Space Study (2018) in developing new methodologies to protect sunlight amenity for the city. He is also a chief investigator in the Neuro-Optimised Virtual Living Lab (NOVELL) with the Florey Institute of Neuroscience and Mental Health, which recently won a European Healthcare Design Award (2022), and leads the Australian Research Council (ARC)-funded 'Walk-Quality' Linkage Project. He is co-author, with Nano Langenheim, of the book *The Death of Urbanism: Transitions Through Five Stages of Grief* (Art Architecture Design Research [AADR], 2020), a metamodern exploration of urban design paradigms through a misappropriation of Elisabeth Kübler-Ross's five stages of grief.

Burry is the lead author of *The New Mathematics of Architecture* (Thames & Hudson, 2010), editor of *Designing the Dynamic* (Melbourne Books, 2013) and co-author of *Prototyping for Architects* (Thames & Hudson, 2016), as well as over a hundred other publications. She has practised, taught, supervised and researched internationally. She is a recipient of six Australian Research Council grants, Good Design Awards and the Robots in Architecture Pioneer's Award. Her research focuses on mathematics and computing in contemporary design. Recent partnered research explores the opportunities for urban and biometric data gathering and application in modelling; simulation and application for the design of better urban environments; and leveraging digital fabrication with simulation and feedback to create better, more sensitive, human-centric spaces. By manipulating geometry and materiality within the design, architecture can fine tune the acoustic, thermal and airflow aesthetics to create higher-quality, energy-efficient environments in buildings and the urban realm. ▢



INTRODUCTION

MARCUS WHITE AND
JANE BURRY



A TRULY GOLDEN HANDBOOK OF URBAN DYSTOPIAS

Cities are facing several coinciding global crises. There is the dominant existential narrative of the impacts of climate change and the need to adapt to them. Resilient architecture and urban planning are needed in response to the unprecedented urbanisation and economic growth that have impacted environments worldwide. New approaches to nature and food production, new modes of transport, renewed anxiety about robots replacing human workforces, ever-accelerating advances in information technology and the humbling recent experience of a global pandemic are challenging norms and expectations. These factors, all with the potential to foster social division, are changing life experiences of populations worldwide, giving rise to the authoritarian politics of anxiety and creating the sense that people are teetering between radically different possible futures.

This issue of Δ explores the dichotomy between idealised visions for the design of urban settlements and the potentially shocking realities which may emerge from those same impulses and intentions. It examines the slippery territory between utopias – the idealised places Oscar Wilde believed humankind sets sail for, and must realise, for progress to take place¹ – and some of the ensuing dystopias in urban design that unfold instead.

Each article re-explores a commonly dismissed historic urban-utopian proposition to test its relevance through the lens of a critical contemporary urban challenge. Each considers both a utopian and dystopian speculative reinterpretation of these potential urban futures, teasing out the elements leading to a desirable future as well as those pointing to unintended malign consequences.

Kundi Shu, Kachung Lo
and Xiufeng Li,
Rhizomatic bridge as a hope
in *Peturbanism: Aquaculture
and Aquatics* scenario,
*Hope in Peturbanism -
Possible Future of Great Ocean
[Road?]* CDE Studio 05,
Melbourne School of Design,
University of Melbourne,
Australia,
2021

Section drawing of aquaculture and aquatic
activities for the exploratory design studio
project exploring the integration of natural
and man-made dynamic adaptive systems
and the reuse of waste materials for
ecological restoration. Studio leader:
Justyna Karakiewicz

Utopia Versus Dystopia and the Need for Speculative Futures

Predictions of the future are always speculative. The further out our forecasts reach, the more speculative and stochastic they become. Although our speculations are built upon historical data, the future is not the past and the past never repeats itself. Nevertheless, we have both an endless appetite and a serious need for speculative futures. They are the basis for planning and it is critical that in constructing and examining them we embrace both hope and scepticism. This is a story about reclaiming the urban design narrative and being alert to the potential impacts of socio-technical decision-making and design in cities.

In their influential book *Speculative Everything: Design, Fiction, And Social Dreaming* (2013),² Anthony Dunne and Fiona Raby of the New York design studio Dunne & Raby describe futurist Stuart Candy's concept of four kinds of design speculations: probable, plausible, possible and preferable. Here, 'probable' refers to projections of scenarios that are likely to occur; 'plausible' forecasts alternative economic and political scenarios that may occur; 'possible' is far more radical, incorporating what is scientifically and technically possible; and 'preferable' represents an intersection of probable and plausible.

While not attempting to predict the future, these speculations are suggested as a way to engage with what might be considered pathways to desirable futures. This approach has similarities with the future-casting methods of multinational energy and mining companies that model available resources, future demand, the likely impacts of lobbying and investment, and the profit gained by ensuring that legislation to mitigate climate change is delayed. Conversely, climate scientists are attempting to understand the factors that would precipitate a range of possible futures, from best-case scenarios for carbon emission reductions to worst-case predictions that result in such dramatic increases in extreme weather conditions that much of the world becomes a barren wasteland akin to that in George Miller's 1979 classic film *Mad Max*.³ Thus, it would be prudent to carefully consider the potential for dystopian outcomes while thinking about highly desirable, even utopian futures.

The word 'utopia' was coined by Thomas More, and used as the title for his 1561 work of socio-political satirical fiction.⁴ Published in Latin, the book's subtitle translates to '*On the Best State of a Commonwealth and on the New Island of Utopia, A Truly Golden Handbook, No Less Beneficial than Entertaining*'. However, the etymology of the word derives not from Latin but from ancient Greek: *οὐ* ('not') and *τόπος* ('place') thus meaning no-place, which might be More's admission that it cannot exist in the real world. Its antonym, 'dystopia', literally means 'bad place'.

More's *Utopia*, a blend of reality and fiction, describes a provocative alternative reality of Tudor England; a perfect nation of 54 nearly identical cities surrounded by farmland on a roughly circular island, where no city may have more than 6,000 residents, family size is controlled, work is important but limited to six hours a day, and idleness is a punishable offence. Gold is devalued, used for chamber pots and worn by slaves; healthcare is universal; property, possessions and resources, including food, are communal and all citizens must take turns participating in farming labour, living a mix of rural and urban life. While there is much freedom of choice for citizens, men

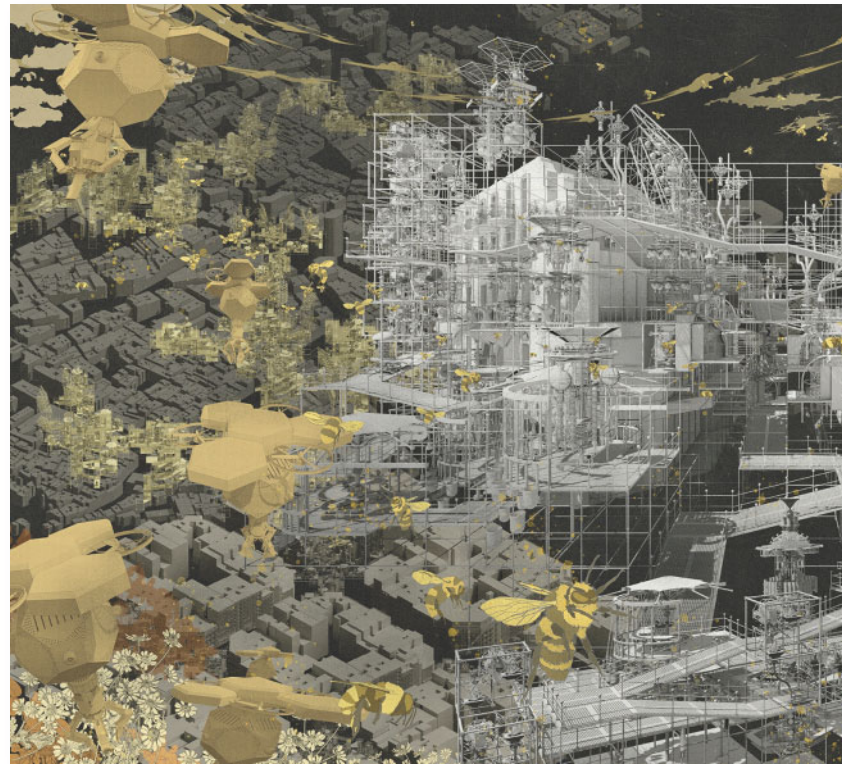


Ambrosius Holbein,
The Island of Utopia
(Thomas More's *Utopia*),
1518

Holbein's woodcutting shows a bird's-eye view of Thomas More's *Utopia*. The crescent-shaped island is 322 kilometres (200 miles) wide, encompassing 54 cities separated by 38-kilometre (24-mile) wide green belts, with the capital Amaurotum at the centre. Each city-state is roughly square shaped, with each side at least 32 kilometres (20 miles) long.

Mingjia Shi and Yichen Sheng,
The Garden of Earthly Delights,
Parametric Parasite CDE design studio,
Melbourne School of Design,
University of Melbourne,
2022

This project for a speculative design studio proposes a vision for a possible future urban environment by introducing bees en masse into Barcelona. The speculative vision dynamically changes its character between dystopia and utopia – a future led by machines to find a new garden of earthly delights suitable for the present and ready for the future. Studio leaders: Justyna Karakiewicz and Liang Yang.



and women all wear the same clothes, only distinguished by genders; people's movement is subject to strictly enforced rules and all must live 'in full view', so no one can break a rule undetected. Many of More's concepts have been influential not only in philosophy and political theory, but also in speculative city design, such as cities with capped population sizes, agricultural green belts, urban and rural lifestyles, communal food production and consumption, and forays into the provision of urban health, safety, wellbeing and unity through observation and surveillance. These themes are explored in this issue of *Δ*. While much of More's *Utopia* was a positive provocation in the context of 1500s Tudor England, many of the book's themes, such as communal living, slavery and lifetime leaders, became core ingredients of the dystopias that would follow.

An early dystopian exploration can be found in Jonathan Swift's *Gulliver's Travels* (1726), in which he identified European society's socio-political trends and extrapolated them to satirical extremes, exposing their underlying flaws. Gulliver, the book's protagonist, visits cities that initially appear impressive and wonderful but upon closer inspection turn out to be deeply problematic. One of these is the Flying Island of Laputa, a technocratic marvel run by a highly educated elite that developed multidirectional magnetic levitation transportation for the city similar in concept to the Shanghai maglev train (2004). The city floats above the ground-dwelling underclass and can be moved to block their sunlight – a thinly veiled criticism of English rule over Ireland. Unlike in science fiction, where the impossible, such as time travel or defying gravity, is posited as fact for the purpose of the narrative, literature about the objectively real possible – a category of literature commonly termed 'speculative fiction' – makes us aware that right now we already have all the ingredients for certain urban futures.

A collective wrong decision is all that is needed to propel society towards an oppressive patriarchal religious dystopia such as that described by Canadian author Margaret Atwood in *The Handmaid's Tale* (1985).⁵ The writer describes a far-right Christian takeover of the US (now Gilead), a dark response to loss of fertility, food shortages and a contamination crisis. The story cuts close to the bone in light of events such as the Capitol Riots (2021)⁶ and the overturning of *Roe v Wade* in the US (2022),⁷ and Atwood's speculative fiction gives us a clear indication of where this politico-religious trend may go if allowed to continue, while providing hope that it is not too late for us to reverse the direction in which we are heading.

For a brighter world, society must question what sorts of cities are wanted. Optimistic speculations, including the 'probable' and utopian 'possible' propositions, need not be top-down visions but must provide projections for a plurality of futures. Putting forward and exploring dystopic fiction that incorporates speculative design builds an understanding of the slight forks in the path towards a better future, and an understanding of the urban design strategies and technologies that, if adopted and adapted, may lead to disturbing and potentially damaging outcomes.

JJ Grandville,
Flying island of Laputa from Gulliver's Travels,
Realm of Balnibarbi east of Japan,
1856

Grandville's etching depicting Jonathan Swift's 7-kilometre (4.5-mile) wide Flying Island of Laputa. The island can be manoeuvred in any direction using magnetic levitation developed by its scientifically educated but impractical elite ruling class. Balnibarbi is the country where the underclass live, below Laputa and controlled by it using threats to pelt the inhabitants with large stones or cut off sunlight and rain.



The Country into the City, or the City into the Country ?

The first group of articles in this issue address, in very diverse ways, dichotomies of city and country, built urban fabric and parks, access to nature, food, and ocular-centric control versus eco-centric coevolution. The challenge of feeding the world will remain ongoing as long as population continues to expand. While cities have grown on the strength of surplus agricultural production, leaving that increasingly efficient and mechanised production outside the city walls, the impacts of agriculture and food transport on carbon emissions and world ecology suggest the need for speculation about subverting or reversing that relationship. Daniele Belleri and Carlo Ratti explore the extent to which in-city agriculture is a romance, the answer to a prayer, or a risky pathway to increased corporatisation and food insecurity. Blurring the dichotomy between city and country still further, Justyna Karakiewicz explores these environmental issues by leaving behind the anthropocentric view of settlement in favour of dynamic adaptive coevolution between human development and interacting natural processes.

Frank Lloyd Wright's Broadacre City concept – the idealisation of the mid-20th-century suburb – presented in his book *The Disappearing City* (1932)⁸ – has subsequently lost some of its currency since the environmental impact of human greed for living space, now incorporated into the concept of our carbon footprint, has begun to have noticeable and disastrous effects worldwide. But global pandemic lockdowns, intended to physically isolate people from one another, spurred a surge in virtual social interaction and digital commerce. Marcus White and Stephen Glackin investigate what living in a 'Broadband-acre City' looks like now and for the speculative future far beyond our current era. Ebenezer Howard's Garden City (1902) adopted a concentric plan to increase access to green urban 'lungs' for housing and social and commercial areas. Nano Langenheim and Kongjian Yu muse on whether his rigid geometrical schema can be shaken up for the 21st-century relationship between human habitation and broader ecological interests or, conversely, whether this might lead to increasing clashes with non-human predators.

In the modern era, the city as a landscape has been fundamentally influenced by the parterres of 15th- and 16th-century French formal gardens via the Beaux-Arts architectural movement (1830s–1870s) and its interpretation by the City Beautiful movement in the US, lasting from the 1890s to the early 1900s. The grand urban gestures and vistas, designed to be seen from above and experienced from the perspective of foot traffic and carriages, gave way to other forms of architecture, experienced from an aerial perspective and designed with different priorities, during the 20th and 21st centuries. Jordi Oliveras charts this journey to the aerotropolis and visual 'selfie city' of today and beyond.

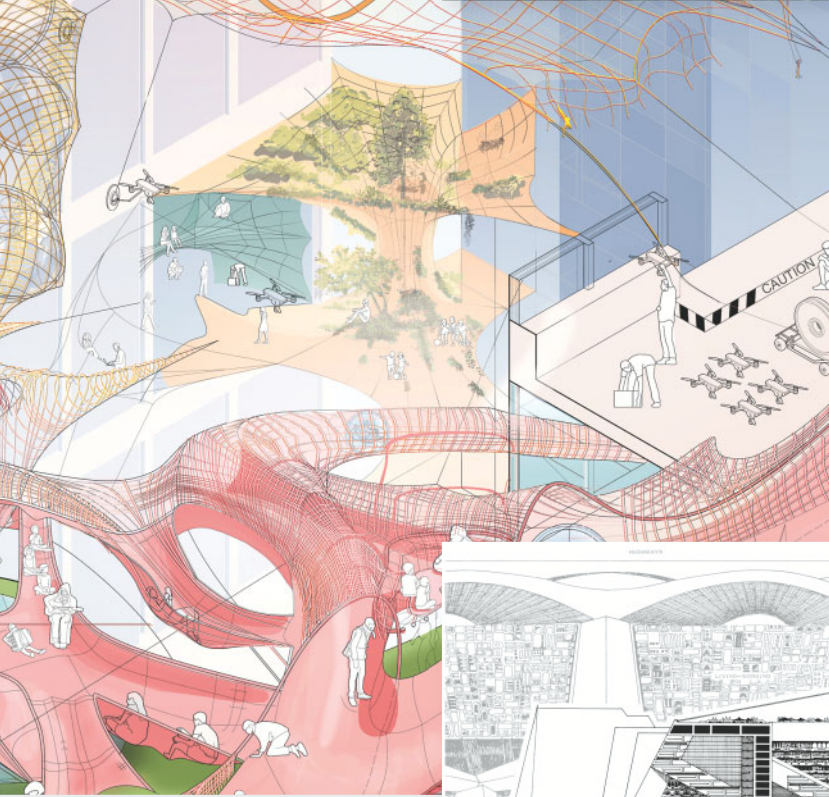
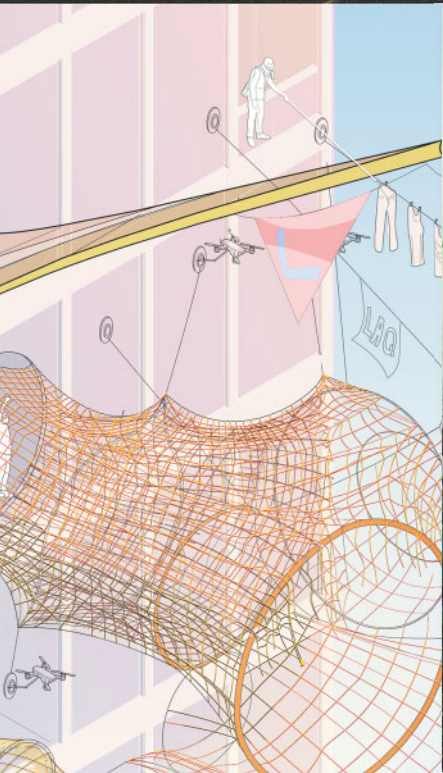
Urban Heat, Movement, Social Divisions and Surveillance

The next group of articles consider questions of problematic urban microclimates, and how these can or might be addressed in the future. Specific philosophical, design and structural decisions underlie the impact of the contemporary urban fabric on carbon emissions, exacerbated social and income disparities, social unrest, surveillance and security practices. These decisions and results are considered and extrapolated to explore where they may lead.



Luke Kim, Arinah Rizal and Qun Zhang, *Diversity through Disruption* design elective, Melbourne School of Design, University of Melbourne with Los Andes University, Bogota, 2020

The project explores dynamic adaptive coevolution and the potential of new manufacturing technologies where, instead of using AI-controlled drones for surveillance or military strikes, they are used for weaving nets for recreational activities and natural structures. The project was part of a course examining complex adaptive systems, human development and natural processes. Coordinator: Justyna Karakiewicz.

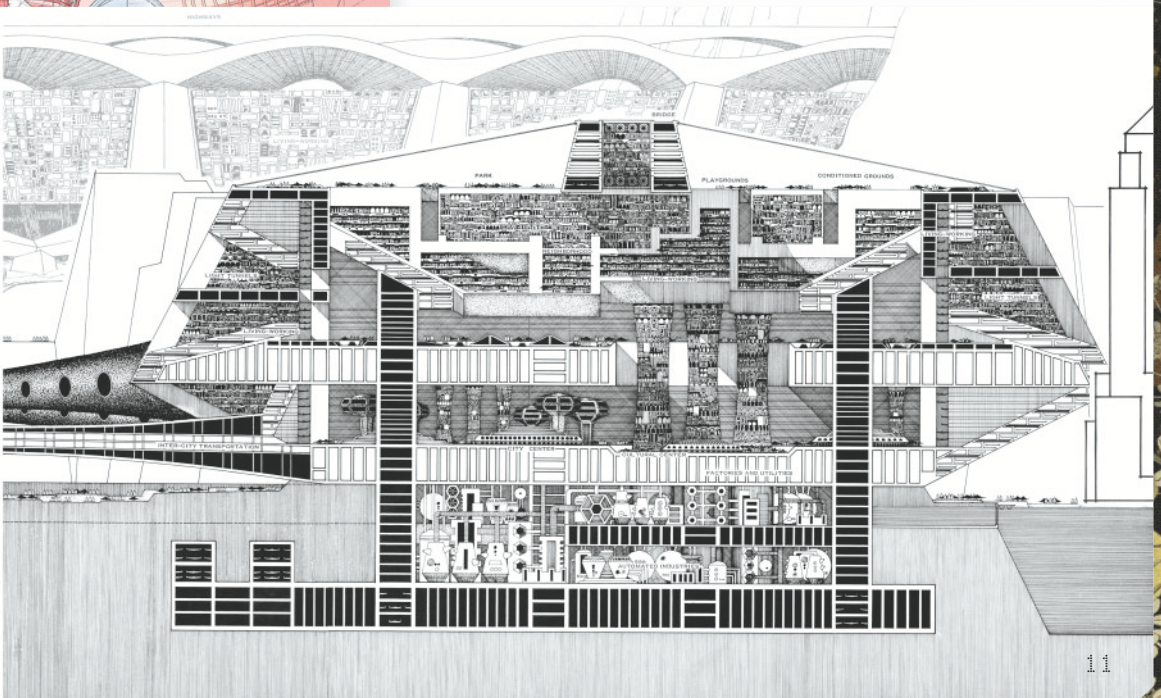


Nano Langenheim,
An Eco-dystopic Urban Forest,
Melbourne, Australia,
2022

An exploration of an overgrown 'rewilded' urban rejuvenation project where a well-intended desire for a 'city in the forest' has backfired, resulting in neither an operational city nor a biologically functioning forest. The project represents a 'mid-journey' destruction of both the forest and the city.

Paolo Soleri,
Infrababel, original drawing,
1968-9

Utopian architect Soleri coined the term 'arcology' to describe the fusion of architecture with ecology. This conceptual design was to be located in a stone quarry. Designed for a population of 100,000, it is one of a series of environmentally driven designs by Soleri, who also founded and commenced the development of the utopian community of Arcosanti in the Arizona desert (1970-).



Most contemporary cities have a partially subterranean mirror city. Its extent depends on many factors – size and underlying geology perhaps first among them. However, as the world focuses more on resilience and defensive approaches to destructive and inhospitable climatic extremes, the opportunities of going underground become more manifest, comprehensive and widespread. Jane Burry and Mehrnoush Latifi use Paolo Soleri's influential, speculative and partially realised future Arcological cities (1970) as a stepping-off point to ponder the utopian and dystopian realities of building and living underground.

Marcus White and Tianyi Yang extend this approach towards mitigating the effects of climate change to reconsider Le Corbusier's proposition for Ville Radieuse (1933). While the widely spaced grid of towers was conceived in a park-like setting to address air quality and green views, it might also present a way to address the problem of urban heat islands in densely packed, rapidly overheating cities. Like thermal comfort, frictionless mobility has played a huge part in cities becoming both bloated carbon emitters and, in some aspects, less than hospitable and healthy. Ian Woodcock considers the potential pros and cons for the nature of cities in a future world of autonomous electric mobility. Tridib Banerjee explores a city that was 'smart' before the era of smart cities, and how it has taken on the contemporary smart-city mantle. In particular, he uncovers Chandigarh's underlying postcolonial roots and the insidious way in which its urban structure has reinforced and even exacerbated social division. Andong Lu transports us from Jane Jacobs' sense of a safer city with eyes on the street – local citizens engaged in and observing their immediate environs – to the ways that cybertracking, fixed camera and mobile surveillance are changing the city and concepts of privacy. Crime protection or state threat? Where is this trend heading and how is it likely to influence the city far into the future?

Zoning, Linearity, Floating and Organic City Planning

The articles mentioned above demonstrate many of the forces shaping cities and their potential future impacts. The final articles investigate the overall physical form and distribution of the city, whilst being driven by very different sets of underlying

Marcus White/Harrison and White and Tianyi Yang,
Digital rendering of
Le Corbusier's 1930 Ville Radieuse
(Radiant City),
2022

Though criticised widely, Le Corbusier's Radiant City urban design proposal of a series of high-rise mixed-use towers surrounded by generous green spaces provides high levels of daylight amenity for occupants. Due to the scheme's high levels of sky view factor across the entire city, it would allow longwave radiation to escape to the atmosphere and would therefore be exceptionally well suited to mitigating the urban heat island effect.

