Index

References to figures appear in italic type; those in bold type refer to tables.

A

Advanced Business Parks (ABP) 174–9
air pollution 4, 5
algorithms
algorithmic divide 97
energy flows 67, 69, 79–81
alignment 171–2, 176, 179
All London Green Grid Supplementary Planning Guidance 2012 143
Allman, P. 189
Alston, P. 110
Amin, A. 1, 15, 120
Anand, N. 86, 87, 88, 193
Anderson, M. 25
Anglian Water 123
Apostolopoulou, E. 173, 176
Appel, H. 7
Arase, D. 173
Athens, Greece 173
Atkinson, R. 177
austerity
and green debt 45–52
and green infrastructure (GI) 148, 153
and post-disaster rebuild 100
racialized 45–6, 48–51, 59
and tactical urbanism 34–5
and urban communing 120–1
and water quality 110, 111, 112, 117, 119, 127–9
authoritarian neoliberal urbanism 176

B

Bakker, K.J. 113, 117
Barnard, P. 33
Barry, A. 167, 169
bathing-water status 121–2, 123–4, 125
battery storage 73, 74–6
Belt and Road Initiative (BRI) 165, 167, 172–80
Benedict, M.A. 140–1
Benidickson, J. 111
Bennett, J. 70–1
Berger, J. 31–2
Berlant, L. 121
Berman, M. 23, 30, 36
Biden, Joe 2, 52
Bitcoin 102
blackouts 70
blockchain technology 91, 97–102
Blouin, Richard 20, 23, 24
blue infrastructure 6
see also sewage systems; water supply/access
Bonilla, Y. 100, 101
book burning 22–3
Bouzarovski, S. 173
Boyd, Emma 116
Boyer, D. 98
Brenner, N. 7
Bradley Lane CSO, Greater Manchester 115
Brexit 128, 174
Bristol City Council 72, 73, 74
Bristol Energy Cooperative (BEC) 72, 73, 78–81
Bristol, UK see Bristol Energy Cooperative (BEC); C.H.E.E.S.E. project; SoLa Bristol
broken world thinking 15
Brown, Murray 30
Brück, J. 145, 150
Bukele, Nayib 102
Burdett, R. 7
Butler, J. 193–4

C

Cambridgeshire and Peterborough Bluetits 123
Cameron, David 110
Canada 3
Candeub and Fleissig 27
Cape Town, South Africa 52–8
capitalism 9, 44, 46, 59, 87, 91, 102, 103
see also climate crisis, temporalities of; global infrastructure; infrastructural reparations
Caribbean see infrastructural reparations
Carse, A. 7, 168
Casablanca, Morocco 196
Center for Architecture 33
Centre for Sustainable Energy 72
Channel 4 News 175–6
 Chattopadhyay, S. 192
C.H.E.E.S.E. project, Bristol 72, 73, 76–8, 77
Chen, X. 173
Chérizier, Jimmy 95–6
Chicago Tribune 21
China 2, 141
 Belt and Road Initiative (BRI) 164, 165, 167, 172–80
Christopher, B. 46, 47
citizen science 125–7
citizenship 13–14, 192
see also infrastructural reparations; sewerage systems
city–nature relationship 68–70
City of London 142, 144, 174
Clark, Ashley 124
Clifford, B. 146, 147
Climate Bonds Standard 44
cclimate crisis, temporalities of 42–61
 Cape Town, South Africa 52–8
 funding requirements 43
 green debt 44–8
 and inequalities 42–5, 48, 49, 52, 56–7, 58, 59–60
 New York City’s green debt 48–52
 regionalizing infrastructural lives 191, 193
climate urbanism 47
colonialism 8, 9, 11
see also infrastructural reparations
colour line 86
combined sewer overflows (CSOs) see sewerage systems
communication infrastructures 87, 88, 90, 93–5
community action
 and green infrastructure (GI) 154
 post-earthquake Haiti 91–6
 and sewerage systems 109–12, 117–20, 121–8, 129–30
compensation 21, 28
computational city 69
congestion 25, 26, 29, 30–1, 52
conjunctural spaces 192
Consumer Rights Act 2015
(UK) 124–5
Conway, H. 150
cooperatives 73, 78–81
Copenhagen, Denmark 3–4
corridors 168–70, 173
cost–benefit analyses 194–5
CounterBalance 166
COVID-19 pandemic 6, 14, 178
Crandall, J. 101
cryptocurrency 97–102
Cumbers, A. 130
Cuomo, Andrew 48
 cyborg city 69
D
data justice approaches 97
Davidson, J. 34
Davies, M. 110
Dawson, A. 100
de Certeau, M. 90
de Coss-Corzo, A. 87, 89
decentralization 97–102
delineation 171, 176
democratic deficits 119, 176, 177
demolition 20–1, 25–6, 28–9, 31, 48
Dempsey, N. 152, 153
Denmark 3–4
Department of the Environment (DOE), UK 139
Detroit, US 5
diesel 93
dietz, Thomas 27–8
digital divide 97, 101
digital infrastructure
Copenhagen, Denmark 3–4
post-earthquake Haiti 94–5
digitization and ecological flows 67–83
and agency 70–1, 73, 76, 78, 80–1, 82–3
in Bristol 71–82
Bristol Energy Cooperative (BEC) 72, 73, 78–81
C.H.E.E.S.E. project, Bristol 72, 73, 76–8, 77
energy aggregation 79–81
infrastructures as hybrid techno-natures 68–70
SoLa Bristol 72, 73, 74–6
disasters see natural disasters
disconnection
and global infrastructure 171–2
and green infrastructure 149–52
infrastructural reparations 86–9, 90, 93–6
displacement of people 20–3, 25–6, 28–9, 31, 48
DIY urbanism 5, 34
docks see global infrastructure
Dodson, J. 7
domestic battery storage 73, 74–6
Driver, F. 164
drought 43, 44, 52–4, 57, 124
Dubois, W.E.B. 86
Dwarka, K. 32–3
E
earthquakes 90–6
Easterling, K. 88, 101, 170
ecological flows see digitization and ecological flows
Eidelman, T.A. 112
Eisenman, T.S. 140
El Salvador 102
electricity
patchwork system 93
renewable electricity generation 72, 73, 74–6, 78–81
Elmina Star Gazette 30
employment
and austerity 51
and global infrastructure 174, 176, 179
encrypted geographies 91, 97, 99–102, 103
#EndSewagePollution coalition 125
energy
energy efficiency, domestic 72, 73, 76–8, 77
infrastructural regionalisms 190
infrastructural repartitions 86, 93, 98, 100
patchwork system 93
see also digitization and ecological flows
energy aggregation 79–81
energy efficiency, domestic 72, 73, 76–8, 77
Enright, T. 139, 155, 169, 193
Environment Act 2021 (UK) 110
Environment Agency (UK) 111, 112, 113, 115–17, 121–2, 125–9
Environmental Audit Committee, UK 127–8
Epstein, S. 167
European Investment Bank 2
European Union, environmental standards 118, 119, 121, 128
everyday urbanism 34
evictions 21–3, 25–6, 28–9, 31, 48
extreme infrastructure 166
F
Fanon, F. 86
Farrells 177
Faust 23, 24
Ferguson, J. 87
finance
cost–benefit analyses 194–5
cryptocurrency 97–102
international level 2, 4, 173, 174–5, 177, 190
regional level 195
sewerage systems 46, 109–10, 117, 118, 119
see also climate crisis, temporalities of;
global infrastructure
Foster, S. 120
France 4–5
Free Basic Water programme, South Africa 56
Friends of Luxmore Gardens, Lewisham 154
Fringe Cities: Legacies of Renewal in the Small American City (exhibition) 33–4
Furlong, K. 42
future proofing 12
G
Gabrys, J. 139
Gandy, M. 86, 87, 130
gangs, Haiti 91, 93, 95–6
Gardens Trust 148
Geldof, Bob 124
gender, and transport use 49, 50
gendered infrastructures 9
Gilbert, D. 164
global infrastructure 164–80, 189–90
alignment 171–2, 176, 179
community involvement 176, 177
concept of 165–6
contrast with surrounds 176–7
corridors 168–70, 173
delineation 171, 176
democratic deficits 176, 177
and fragmentation 169
funding for 177
nodes 167, 168–70, 173–80
pivoting 172, 173
project failure 178–9
redevelopment of Royal Albert Dock 174–80, 175, 178
Silk Road urbanism 164, 165, 172–80
speculation 170–1, 173, 174–5
stages of deployment 170–2
standardization 167–70, 179–80
transparency and accountability 176, 177
urban perspective 166–8
global infrastructure arms race 6
Global Infrastructure Connectivity Initiative 169
global infrastructure turn 15
global infrastructures of (dis)connectivity 90
Goethe 23
Graham, Horace 29–30
Graham, S. 94, 98, 113, 138, 139, 155
Grand Paris Express 4–5
Greater London Authority (GLA) 142, 143, 178
green bonds/debt 44–8, 59–60
Cape Town, South Africa 55–8
environmental benefits 47
extent of 46–7
New York City 48–52
shortcomings 47, 59–60
green halo 45
green infrastructure (GI) 6, 137–55
administrative fragmentations 152–4, 153
challenges of 145–55
community organizations 154
conceptual embeddedness 145–9, 147
definition 140–1, 154
expansion of 139–41
funding issues 148–9, 153
infrastructural turn 138–9, 154–5
in London 141–55, 143–4
multifunctionality of 151–2, 154
planning of 141, 142, 143, 146–9, 150–1, 152, 154 residents’ view of 146 spatial disconnection 149–52, 150 strategic aspect 139–41 green roofs 142, 151 grey infrastructure 3, 6, 140 see also transport; sewerage systems Grey-to-green guide 143 guerrilla urbanism 34 Gunder, M. 150 Gupta, A. 172

H
Haiti 90–6, 92, 94 Hall, D. 119 Hammond, E. 175 Hammond, P. 127 Hardin, Garrett 119 Harris, L.M. 56, 57 Harrison, G. 147 Hayling Sewage Watch 126–7 health and combined sewer overflows (CSOs) 114, 121, 122–3, 127 and green infrastructure (GI) 145, 151 and pollution 5 Heathcote, C. 6 Henry, Ariel 93 Hetherington, K. 194 Hilyard, N. 166 Historic England 148 Hommels, A. 11 Honduras Próspera Inc 102 Horst, H.A. 87 Horwood, K. 152 household debt 52–8 households and energy efficiency 73, 76–8, 77 and renewable energy 73, 74–6 and water supply 52–8 housing demolition and eviction 20–1, 25–6, 28–9, 31, 48 and energy efficiency 72, 73, 76–8 and green spaces 151, 153 and renewable energy 73, 74–6 housing amenity space 151, 153 Hubbard, P. 70 Huber, M. 52 Hughes, C.J. 36 Hulin, J.-P. 146 Hurricane Irma 97, 99–100 Hurricane Maria 97, 99–101 I Iaione, C. 120 Ilkley Clean River Group (ICRG) 122, 123–4, 125

incomplete futures 199–208, 200, 202, 203 contradictory logics 202–5 infrastructural incompleteness 200–2 inequalities algorithmic divide 97 and bearing of risk 46, 49, 50–1, 58, 59, 60 and climate crisis 42–5, 48, 49, 52, 56–7, 58, 59–60 digital divide 97 global ‘colour line’ 86 regionalizing infrastructural lives 191 and transport infrastructure 48–52, 59, 191 water supply/access 52–9, 86, 113 see also infrastructural reparations infrastructural citizenship 14–15, 192 see also infrastructural reparations; sewerage systems infrastructural incompleteness see incomplete futures infrastructural reparations 85–104 conception of 87–91 and disconnection 86–9, 90, 93–6 Port-au-Prince, Haiti 90–6 Puerto Rico 91, 97–102 regionalizing infrastructural lives 193 Infrastructure Investment and Jobs Act 2021 (US) 36, 52 infrastructure (overview) conception of 7–8 incomplete futures 199–208 infrastructural thinking 14–16 infrastructuring urbanization 9–11 living infrastructure 13–14 as process and object 9 producing infrastructure 11–13 reason for studying 6–9 regionalizing infrastructural lives 188–96 types of 6, 7 infrastructure space 88, 101 infrastructuring from below 87, 89, 91–6 infrastructuring urbanization 9–11 Internet-of-Things approach 3–4 islands see infrastructural reparations Islington, London 146, 151


Kitchin, R. 194
Kivland, C.L. 93, 95
Klein, N. 100, 101
Knowle West Media Centre 75
KPMG 166
Kragh-Furbo, M. 79–80

L
Lafuente, Colette 32
Larson, J. 34, 35
Lave, R. 48
Lefebvre, H. 192
Legacy, C. 13, 129, 192
Lennon, M. 140, 154
Leroy, J. 50
Lewis, J. 34
Lewis, J.S. 96
libertarians 97–102, 103
Lindmark, John 20, 21–3
Littlewood, S. 154
Liverpool Road/Newhall Avenue CSO, Greater Manchester 116
living infrastructure 13–14
Lloyd, P. 127
Lobina, E. 119
London see global infrastructure; green infrastructure (GI)
London Environment Strategy 2018 143
London National Park City Foundation 148
London Plan 2008 142
London Plan 2021 142, 143
London Sustainable Drainage Action Plan 2016 143
London Transport Strategy 2018 143
London Urban Forest Plan 2020 143
Long, J. 47
Los Angeles, US 30
Low Carbon Network Fund 74
Lowell Sun 22
Lukaya city, Uganda 202

M
Mace, A. 147
maintenance and repair see climate crisis, temporalities; infrastructural reparations; sewerage systems
Malby, Rebecca 125
Malchow, H.L. 146, 150
Manningtree Mermaids 123
Markusen, A. 193
Maroney, Emma 28–9, 30, 31
Maroons and pirates 103
Marvin, S. 69, 94, 98, 113, 138, 139, 155, 167
MASS Design Group 33, 34
Mathers, A. 153
Matsler, A.M. 141
McCormack, D.P. 78
McFarlane, C. 139, 191–2
McKinney, J. 100
McKittrick, K. 102
McMahon, E.T. 140–1
McNeill, D. 167
Meerow, S. 141, 151
Mell, I. 141
Mexico City 89
Mid-Hudson Bridge, US 25, 29–30
Mid-Hudson Industrial Association 26
modern infrastructural ideal 112, 113, 130
Moïse, Jovenel 91, 93, 96
Morales, M. de C. 113
Moses, Robert 48
Moss, T. 130
Mowrer, E.A. 22
Mumford, L. 30
municipalism 130–1
Murphy, Michael 33
Myers, H. 20–1

N
Nasso, R. 33, 35
National Lottery Heritage Fund (NLHF) 148–9
national park authorities, UK 148
Natural Capital Accounts for Public Green Space in London 2017 143
natural disasters earthquakes 90–6
hurricanes 97, 99–101
Superstorm Sandy 43, 48, 49, 50
Natural England 148
nature see digitization and ecological flows; green infrastructure (GI)
New York City 43–5, 47, 48–52
New York Metropolitan Transit Authority (MTA) 44, 48, 49–50, 51–2
New York Times 21, 22, 30, 31
Newham, London 176–7
nodes 167, 168–70, 173–80

O
Office for Environmental Protection (OEP), UK 129
offshore tax-havens 97–102
Ofwat, UK 117, 129
Opdycke, S. 32
open-water swimming 122–4
Outdoor Swimming Society 123
Oxford, UK 125

P
Palmer, I. 55
Paris, France 4–5
parks see green infrastructure (GI)
Pascoe, George 22
pastoral idyll 145, 147, 149
patchwork/patching 89, 90–6, 102, 103
Paul, F. 130
Pendlebury, J. 150
Penny Lane Grimesbottom CSO, Greater Manchester 126
photovoltaic (PV) solar power generation 72, 73, 74–6, 79–81
Pickford, J. 175
Pierce, Brock 99–100
pirates 103
pivot 172, 173
planetary urbanization 7
planning by doing 34
political unrest 91–6
pollution
air pollution 4, 5
EU standards 118, 119, 121
see also sewerage systems
pop-up urbanism 34
Port-au-Prince, Haiti 90–6, 92
ports see global infrastructure
potholes 3
Poughkeepsie City Center Connectivity Project 34–5
Poughkeepsie Journal 20, 21, 22, 26–7, 29, 30, 32
Poughkeepsie, US see tragedy of development
Powells, G. 82
power relations see infrastructural reparations
producing infrastructure 11–13
Puerto Rico 91, 97–102
race
and austerity 45–6, 48–51, 59
and capitalism 9, 44, 46, 59, 87, 91, 102, 103
and environmental justice 5
global ‘colour line’ 86
and transport infrastructure 48–51, 191
wage gap 51
water supply/access 52–9, 86
see also climate crisis, temporalities of; infrastructural reparations
Ragnedda, M. 97
railways 4–5, 48–52, 165, 173
Kao, V. 170
Reconnecting Communities Act (US) 36
redlining 5, 48
Rees-Mogg, Jacob 128
regionalizing infrastructural lives 188–96
and fragments 191–3
futures 193–6, 196
spatial fetishes 189–91, 190
remunicipalization 130–1
renewable electricity generation 72, 73, 74–6, 78–81
reparative infrastructural justice see infrastructural reparations
retail sector 26–7, 30, 32, 50
rewilding 150
Rice, J.L. 47
risk, unequal bearing of 46, 49, 50–1, 58, 59, 60
rivers see sewerage systems
Rivers Trust 122
roads
Belt and Road Initiative (BRI) 173
justification for development 196
potholes 3
see also tragedy of development
Roatán, Honduras 102
Rodney, W. 86, 87
Rolison, Rob 33, 35
Ronall, J.O. 22
Rosenman, E. 50
Roy, A. 8
Royal Albert Dock, London see global infrastructure
rural idyll 145, 147, 149
Rutherford, J. 139
S
Safransky, S. 112
Salisbury, H. 30
San Juan Puerto Rico 97–102
sanitation see sewerage systems
scammers 96, 102, 103
Schindler, S. 166, 167
Schmit, C. 7
Schwartz, Sam 34
Scott, J.C. 31
segregation 5, 52
Sells, C. 25
sewerage systems 109–31
antiquated system 109–10, 112–13, 118, 119, 128
bathing-water status 121–2, 123–4, 125
community anger and action 109–12, 117–20, 121–8, 129–30
culture of flushing 111, 113
demise of an ideal 118–19
environment bill 109–11, 123, 126–7, 128
financing of 46, 109–10, 117, 118, 119
driveway for water companies 115, 116
impact of discharge 114, 115, 122, 123, 125, 127
logic of combined sewage overflows (CSOs) 112–15, 114–15
monitoring as water citizenship 125–8, 126
and municipalism 130–1
and private water companies 111–13, 115–19, 122–30, 190–1
profits of private companies 117–18
regionalizing infrastructural lives 190–1
regulation of 110, 111, 112, 113, 115–19, 121–2, 125–9
resistance to water companies 124–5
system in crisis 115–18, 116
urban commons 119–21
INDEX

and water quality 115–16, 117, 118–19, 121–3, 125–8
see also water supply/access
Sharpe, C. 85, 87
Silk Road urbanism 164, 165, 172–80
Simone, A 86, 87, 89–90, 98, 171, 192
Simpson, I. 97, 99, 102
slavery 85, 86, 103
smart cities 3–4, 68, 69
Smart Energy Cities 72
Société du Grand Paris 4–5
Sol (formerly Puertopia) 99
Sol, X. 166
SoLa Bristol 72, 73, 74–6
solar power 72, 73, 74–6, 79–81
Sörgqvist, P. 45
SOS Whistable 124–5
South Africa 52–8, 90
South Coast Sirens 126
Southern urban theory 43–4
Southern Water 116, 123, 124, 126
speculation 170–1, 173, 174–5
standardization 167–70, 179–80
Star, S.L. 6, 15, 111
start-up societies 98–102
Start-up Societies Foundation 100
Steele, W. 6, 7
Stevens, J. 21
Street Plans Collaborative 34
street sovereignty 93, 94, 95, 96
Streets Plan Collaborative 34
subway system, New York 48–52
Sudjic, D. 7
Superstorm Sandy 43, 48, 49, 50
Surfers Against Sewage (SAS) 118–19, 121
Swipe it Forward 49
Swyngedouw, E. 69, 111

T

tactical urbanism 34–5
tax havens 97–102
tecnatures 69
Thames Water 115, 117, 118, 125
thermal imaging 73, 76–8, 77
Thomas, K. 154
Timmermans, S. 167
Tobin, T. 32
Tormos-Aponte, F. 88
Toronto, Canada 3
Tower Hamlets Council, London 148–9, 151
traffic congestion 25, 26, 29, 30–1, 52
tragedy of development 20–37
and abstractions 31
background to case study 24–31
compensation 21, 28
demolition and evictions 20–3, 25–6, 28–9, 31
and Faust 23
justification for development 24–31
legacy of 31–6
opposition and support 26–31
paradox of 35–6
regionalizing infrastructural lives 191
repeating mistakes 33–7
tactical urbanism 34–5
tragedy of the commons 119
transport

corridors 165, 168–70, 173
Grand Paris Express 4–5
and inequalities 48–52, 59, 94, 191
post-earthquake Haiti 94
railways 4–5, 48–52, 165, 173
roads 3, 20–37, 173, 196
subway system, New York 48–52
workers 51
Trouillot, M.-R. 85, 87

U

Uganda 202
Ungoed-Thomas, Thomas, J. 179
United Kingdom
austerity 110, 111, 117, 148, 153
see also digitization and ecological flows;
global infrastructure; green infrastructure (GI); sewerage systems
United Nations 93, 94
United States 2
austerity 48–52, 100
Detroit 5
New York City 43–5, 47, 48–52
Puerto Rico 97–102
see also tragedy of development
urban agriculture 5
urban commons 112, 119–21, 129
urban computation 69
urban containment policies 143
urban prototyping 34–5
urbanization of nature 69–70
Urry, J. 15

V

Vakil, C. 36
Van Tine, Walter 28–9
vegetated roofs 142, 151
virtual power plants 79

W

Wacquant, L. 89
wage gap 51
Walker, G. 79–80
Walton, D. 173
Walwyn Close CSO, Greater Manchester 114
Ward, K. 193
Ward, N. 121
Warleigh Weir, Bath 122, 124
Washington, DC 46, 47
water citizenship see sewerage systems
Water Industry Act 1991 (UK) 124, 129
water management devices (WMDs) 55–8, 56
water quality see sewerage systems
water remunicipalization 130–1
water shortages 43, 44, 52–4, 57, 124
water supply/access
   Cape Town, South Africa 52–8, 53–4, 56–7
cost of 53–5, 56–8, 92–3
green bonds 55–8
and inequalities 52–9
non-payment of bills 124–5
patchwork concept 89
post-earthquake Haiti 92, 92–3
regionalizing infrastructural lives 190–1
remunicipalization of 130–1
shortages 43, 44, 52–4, 57, 124
water management devices (WMDs 55–8, 56
see also sewerage systems

Watt, P. 164
Western Power 72, 74, 75
White, D.F. 69, 71
White flight 5
Whitstable Bluetits 123
Wiig, A. 138, 139
Wilbert, C. 69, 71
Wild Justice 129
wild swimming 122–4
Windrush Against Sewage Pollution (WASP) 127, 129
World Smart Cities Award 3–4
Wright, H. 140, 141

Y
Yates, J.S. 56, 57
Yorkshire Water 122