Guest-edited
by Mark Garcia

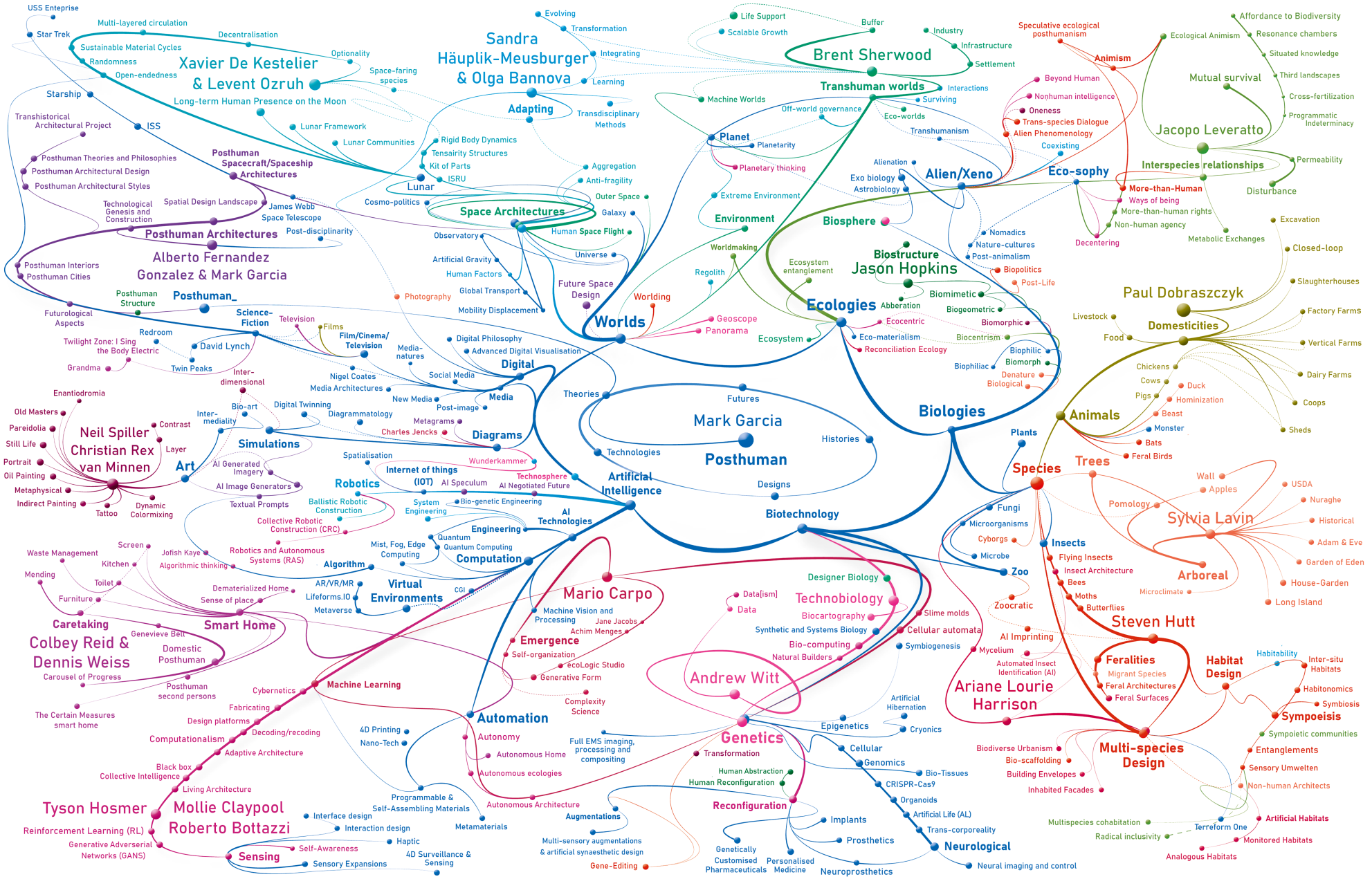
01 | Vol 94 | 2024

AD



POSTHUMAN ARCHITECTURES

THEORIES, DESIGNS, TECHNOLOGIES AND FUTURES


Posthuman
Mark Garcia
Futures
Histories
Designs
Technologies
Theories
Worlds
Worlding
Geoscope
Panorama
Future Space Design
Space Architectures
Lunar
Planet
Planetarity
Planetary thinking
Extreme Environment
Environment
Worldmaking
Regolith
Ecosystem
Ecosystem entanglement
Ecologies
Ecocentric
Eco-materialism
Reconciliation Ecology
Biocentrism
Biophilic
Biomorph
Denature
Biophiliac
Biological
Abberation
Biomimetic
Biogeometric
Biomorphic
Biologies
Biotechnology
Artificial Intelligence
Robotics
Internet of things (IOT)
AI Speculum
AI Negotiated Future
Technosphere
Wunderkammer
Spatialisation
Ballistic Robotic Construction
System Engineering
Bio-genetic Engineering
Collective Robotic Construction (CRC)
AI Technologies
Engineering
Quantum
Quantum Computing
Mist, Fog, Edge Computing
Computation
Algorithm
Robotics and Autonomous Systems (RAS)
Algorithmic thinking
Virtual Environments
AR/VR/MR
Lifeforms.IO
Metaverse
CGI
Dematerialized Home
Sense of place
Smart Home
Caretaking
Colbey Reid & Dennis Weiss
Genevieve Bell
Domestic Posthuman
Carousel of Progress
Posthuman second persons
The Certain Measures smart home
Waste Management
Kitchen
Mending
Toilet
Furniture
Screen
Jofish Kaye
Machine Learning
Cybernetics
Fabricating
Design platforms
Computationalism
Decoding/recoding
Adaptive Architecture
Black box
Collective Intelligence
Living Architecture
Tyson Hosmer
Reinforcement Learning (RL)
Generative Adversarial Networks (GANS)
Mollie Claypool
Roberto Bottazzi
Sensing
Interface design
Interaction design
Haptic
Self-Awareness
Sensory Expansions
4D Surveillance & Sensing
Programmable & Self-Assembling Materials
Metamaterials
4D Printing
Nano-Tech
Automation
Autonomy
Autonomous Home
Autonomous ecologies
Autonomous Architecture
Augmentations
Multi-sensory augmentations & artificial synaesthetic design
Gene-Editing
Genetics
Transformation
Human Abstraction
Human Reconfiguration
Reconfiguration
Genetically Customised Pharmaceuticals
Personalised Medicine
Implants
Prosthetics
Neuroprosthetics
Neurological
Neural imaging and control
Trans-corporeality
Artificial Life (AL)
Organoids
CRISPR-Cas9
Bio-Tissues
Genomics
Cellular
Epigenetics
Cryonics
Artificial Hibernation
Full EMS imaging, processing and compositing
Andrew Witt
Mario Carpo
Machine Vision and Processing
Jane Jacobs
Achim Menges
Emergence
Self-organization
ecoLogic Studio
Generative Form
Complexity Science
Technobiology
Designer Biology
Biocartography
Synthetic and Systems Biology
Bio-computing
Natural Builders
Data[ism]
Data
Slime molds
Cellular automata
Symbiogenesis
Ariane Lourie Harrison
Automated Insect Identification (AI)
AI Imprinting
Mycelium
Zoocratic
Zoo
Microbe
Cyborgs
Microorganisms
Fungi
Plants
Species
Insects
Flying Insects
Insect Architecture
Bees
Moths
Butterflies
Trees
Arboreal
Microclimate
Pomology
Wall
Apples
Sylvia Lavin
USDA
Nuraghe
Historical
Adam & Eve
Garden of Eden
House-Garden
Long Island
Steven Hutt
Feralities
Migrant Species
Feral Architectures
Feral Surfaces
Habitat Design
Habitability
Inter-situ Habitats
Habitonomics
Symbiosis
Sympoeisis
Sympoietic communities
Entanglements
Sensory Umwelten
Non-human Architects
Artificial Habitats
Terreform One
Monitored Habitats
Analogous Habitats
Multispecies cohabitation
Radical inclusivity
Multi-species Design
Biodiverse Urbanism
Bio-scaffolding
Building Envelopes
Inhabited Facades
Animals
Domesticities
Paul Dobraszczyk
Livestock
Food
Chickens
Cows
Pigs
Duck
Hominization
Beast
Monster
Bats
Feral Birds
Slaughterhouses
Factory Farms
Vertical Farms
Dairy Farms
Coops
Sheds
Excavation
Closed-loop
Biostructure
Jasón Hopkins
Nomadics
Nature-cultures
Post-animalism
Biopolitics
Post-Life
Eco-sophy
Alien/Xeno
Alienation
Exo biology
Astrobiology
Biosphere
Transhuman worlds
Interactions
Surviving
Transhumanism
Off-world governance
Eco-worlds
Machine Worlds
Brent Sherwood
Life Support
Scalable Growth
Buffer
Industry
Infrastructure
Settlement
Speculative ecological posthumanism
Animism
Beyond Human
Nonhuman intelligence
Oneness
Trans-species Dialogue
Alien Phenomenology
Coexisting
Jacopo Leveratto
Mutual survival
Affordance to Biodiversity
Resonance chambers
Situated knowledge
Third landscapes
Cross-fertilization
Programmatic Indeterminacy
Interspecies relationships
Permeability
Disturbance
More-than-Human
Ways of being
More-than-human rights
Non-human agency
Decentering
Metabolic Exchanges
Sandra Häuplik-Meusburger & Olga Bannova
Evolving
Transformation
Integrating
Learning
Adapting
Transdisciplinary Methods
Aggregation
Anti-fragility
Outer Space
Galaxy
Human Space Flight
Universe
Observatory
Artificial Gravity
Human Factors
Global Transport
Mobility Displacement
Photography
Xavier De Kestelier & Levent Ozruh
Optionality
Space-faring species
Long-term Human Presence on the Moon
Lunar Framework
Lunar Communities
Rigid Body Dynamics
Tensairity Structures
Kit of Parts
ISRU
Cosmo-politics
Spatial Design Landscape
James Webb Space Telescope
Post-disciplinarity
Alberto Fernandez Gonzalez & Mark Garcia
Posthuman Architectures
Posthuman Spacecraft/Spaceship Architectures
Technological Genesis and Construction
Transhistorical Architectural Project
ISS
Starship
USS Enteprise
Star Trek
Multi-layered circulation
Decentralisation
Sustainable Material Cycles
Randomness
Open-endedness
Posthuman Theories and Philosophies
Posthuman Architectural Design
Posthuman Architectural Styles
Posthuman Interiors
Posthuman Cities
Posthuman Structure
Posthuman_
Futurological Aspects
Science-Fiction
Television
Films
Film/Cinema/Television
Redroom
Twilight Zone: I Sing the Body Electric
David Lynch
Twin Peaks
Grandma
Nigel Coates
Media Architectures
Media-natures
Digital Philosophy
Advanced Digital Visualisation
Digital
Social Media
New Media
Post-image
Media
Inter-dimensional
Enantiodromia
Old Masters
Pareidolia
Still Life
Portrait
Oil Painting
Metaphysical
Indirect Painting
Tattoo
Dynamic Colormixing
Neil Spiller
Christian Rex van Minnen
Contrast
Layer
Art
Inter-mediality
Bio-art
Digital Twinning
Diagrammatology
Metagrams
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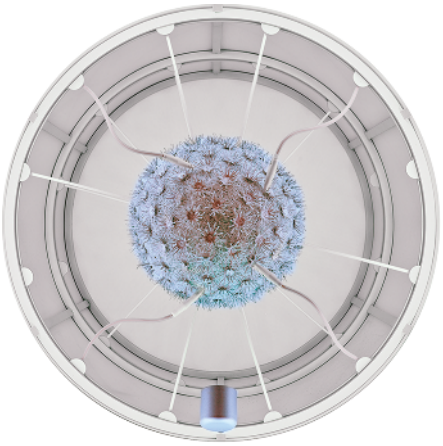
Diagrams
Simulations
AI Generated Imagery
AI Image Generators
Textual Prompts





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Mark Garcia

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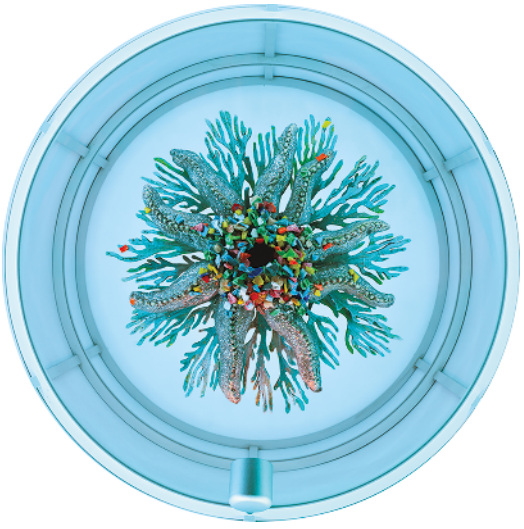

01 | Vol 94 | 2024

About the Guest-Editor 5
Mark Garcia

Introduction 6

The Posthuman in Architectures and Other Spaces
Mark Garcia

More-Than-Post 14
A Five-Step Recipe for Decentring Design
Jacopo Leveratto

A Posthuman Architectural Artificial Intelligence *Speculum?* 22
Text and Images in Future Spaces
Alberto Fernández González and Mark Garcia

Disruptive Ecologies 30
Design with Nonhuman Intelligences
Roberto Bottazzi, Tyson Hosmer and Mollie Claypool

Feral Surfaces 38
Building Envelopes as Intelligent Multi-species Habitats
Ariane Lourie Harrison

On the Posthuman Charm of Slime and Mould 46
Mario Carpo

Alternative Domiciles for the Domestic Posthuman 52
Colbey Reid and Dennis Weiss

Aliens Among Us 62
The Posthuman *Wunderkammer*
Andrew Witt



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Guest-edited by **Mark Garcia**

Alternate Architectural Subjects 70

An Apple Tree That Lived on Long Island

Sylvia Lavin



Beyond Domesticities 76

Posthuman Architectures for Animals We Farm

Paul Dobraszczyk

Flying Feral 84

Posthuman Architectures, Enclosures and Open-Loop Interface Designs

Steven Hutt

Learning, Teaching, Coexisting, Thriving 94

The Evolution of Space Architecture in the Posthuman Era

Olga Bannova and Sandra Häuplik-Meusburger

Scaling Lunar Habitats from Research Outposts to Thriving Villages 100

Xavier De Kestelier, Levent Ozruh and Jonathan Irawan

Posthuman Space Architecture 110

Machine Worlds to Seed Space

Brent Sherwood

21st-Century Posthuman Spaceship and Spacecraft Architectures 118

Mark Garcia

‘Ultimately posthuman architecture points to the idea that in some cases the not-just-human, the no-architect and no-architecture constitutes the ideal or optimal design act’

— Mark Garcia

From Another Perspective

The Ultimate Sin 128

The Super-Surrealist Body

Neil Spiller

Contributors 134

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Jason Hopkins,
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Bricolo Falsarella, Lugana Winery, Lugana, Italy, 2023.
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Page 1
Certain Measures,
The Observatory,
Museum of the Future, Dubai,
United Arab Emirates, 2022.
Image courtesy Certain Measures

AD ARCHITECTURAL DESIGN

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ABOUT THE

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MARK GARCIA



Mark Garcia is a London-based academic, author, journalist and photographer. His PhD 'The 21st-Century Posthuman Architectural Design of Spacecraft and Spaceships, is supervised by Professor Mario Carpo and Professor Nat Chard, as part of the Architecture and Digital Theory (ADT) research programme directed by Professor Frédéric Migayrou and Professor Mario Carpo at the Bartlett School of Architecture, University College London (UCL). He holds a BA degree in the History of Art and Philosophy from UCL, and an MSc in International Business from Birkbeck College, University of London. As a lecturer at the Bartlett, he teaches on the B-Pro Architectural Design MA (History and Theory) and is the coordinator of the Master of Research (MRes) and Architecture and Digital Theory PhD Programme Seminar. From 2020 to 2022 he designed and led the school's '21st Century London Architectures' BA module in the Department of History of Art. He was previously a Senior Lecturer at the University of Greenwich, London, where he redesigned and led the two 'Histories/Theories/Futures' MArch thesis modules. Prior to this he was Research Co-ordinator at the Royal College of Art's School of Innovation Design Engineering, and Deputy Head and Head of Research in the Department of Architecture and Interiors. From 1997 to 2001 he worked as an academic researcher and project manager at St Antony's College, University of Oxford, under Professor Sir Theodore Zeldin.

Mark has also worked in practice, at Branson Coates Architecture and at Skidmore, Owings & Merrill (SOM) in London, in research, development and marketing. He has published articles in *Building Design* and the *Architectural Review,* and has been a regular contributor to AD. He is the Guest-Editor of the AD issues *Architextiles* (November/December 2006), *Patterns of Architecture* (November/December 2009), and *Future Details of Architecture* (July/August 2014), and the editor of *The Diagrams of Architecture* (John Wiley & Sons, 2010). He has lectured at universities in Japan, Canada, Germany, the US, Switzerland and the Republic of Ireland. He was the inaugurating guest panellist for the opening symposium of the 2017 Southern California Institute of Architecture (SCI-Arc) exhibition 'Close Up', and the keynote lecturer for the 2019 'Experimental Diagramming' exhibition at the Berlin Architekturmuseum and Technical University of Berlin. His 2017 'Up Close' solo show of photographs of the models of Zaha Hadid was exhibited at Cornell University College of Architecture, Art, and Planning. His 114-minute film *REDroom REDux* about David Lynch's spatial design of his *Twin Peaks* 25-year film and TV project was screened at the University of Greenwich and featured as part of the Hawksmoor International Lecture Series in 2018. AD

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THE POSTHUMAN IN ARCHITECTURES AND OTHER SPACES

INTRODUCTION

MARK GARCIA

> Posthuman Architecture […]There has not been an architecture of similar vigour in 100 years […]
> A new architecture is born beyond our attention […]
> There is no tradition […]There is no context […]
> There is nothing.
>
> — Rem Koolhaas, *Countryside: A Report*, 2020[1]

Though the term 'posthuman' was coined in 1977 by the Egyptian scholar Ihab Hassan,[2] for some scholars[3] the posthuman *avant la lettre* has always (back to ancient Egypt) coexisted with the human. For others[4] we became posthuman in the 20th century.

Posthumanisms are responses to human bodies developing in new ways, human minds and brains being altered in recent neurological, epistemological ways which effect equally young forms of evolution (ie auto-evolution), reproduction, the agent (ie as holobiont – symbiotic

Empty stainless-steel cleanroom prepared for installation

The Modernist cleanroom was invented in the US in 1960. Cleanrooms are always getting 'cleaner'. An ISO 14644-1 level 1-certified cleanroom is the cleanest ever, for now. Designed for and inhabited mostly or only by robots and machines (to make microchips, batteries or spacecraft; to handle radioactive materials, nanotech or living pathogens; or in medical/life-sciences and exobiological laboratories/operating theatres), they are one of the most posthuman, hyper-rationalised and controlled interiors of the regime of ultra-techno-minimalism, unknown to previous versions of Modernism.



host-based micro ecosystem) and of identity and the subject's phenomenological sensorium. They are responses to relatively novel planetary-scale contexts and conditions where technologies and other nonhuman assemblages and entities are having such profound impacts that these are now confounding human understanding and therefore out of our control. Some of these drivers depend on contested definitions of 'life', 'vital' and 'animate', 'sentient' and 'conscious' – particularly in reference to biological organisms and now artificial intelligence (AI), but also partly because experts disagree on definitions of 'human', 'life' and 'self'. Posthumanists now refer to the 'post-person'.[5] The consequences of this alternative, networked, systemic, extended and augmented 'I' is multiply located and dynamic. It acknowledges more malleable affiliations and aspirations rather than simplistic, permanent and received identities.



Daniela Yaneva,
Down House in AD 2099,
2019

above: Part of a posthuman project based on a speculative futurology for Down House, Charles Darwin's home in Kent, England, which he owned and occupied from 1842. In this posthuman permutation, the re-natured house becomes sentient and begins to redesign itself, finally escaping into the surrounding landscape to redesign that. The ultimate return of a posthumanly evolved but architecturalised biology to the countryside.

Throughout the 21st century, 'posthuman' began involuting and conspicuously complicating to include (amongst others) the transhuman, nonhuman, humanity 2.0, after-human, neocybernetic, subhuman, a-human, blue-posthuman, neo-human, infra-human, alter-human, ultra-human, other-than-human, beyond-human – almost any prefix-human. The most well-known of these in relation to but often contrasted with posthumanisms are the more controversial and more politically fractious 'transhumanisms' and the more radically left-leaning metahumanisms. Notably, the posthuman includes the xeno/alien and even the absurd 'post-posthuman'.

Tamar Sharon's *Human Nature in an Age of Biotechnology* (2014)[6] provides perhaps the most rigorous and robust taxonomy of posthumanisms by distinguishing them on three continuous scales of 'optimist–pessimist' (including liberal, radical and dystopic posthumanisms), 'historical/materialist–philosophical/ontological' (including 'anti-humanisms' and 'methodological posthumanism') and 'humanist–non-humanist' axes. Other major divisions do however exist, such as those between bio- and techno-posthumanisms and divisions in relation to disciplines, practices, professions and geography.

Mario Carpo and Mark Garcia with Steven Hutt,
Digital Architectures Chronogram,
From the Chronograms of Architecture
(e-flux Architecture and the Jencks Foundation),
2023

opposite top: The historiographic context, concepts and contents of posthuman architectures in relation to the histories, technologies, designs and theories of architecture from 1940 to the present. Based on a hand-drawn diagram and essay by Mario Carpo for eflux: https://www.e-flux.com/architecture/chronograms/.

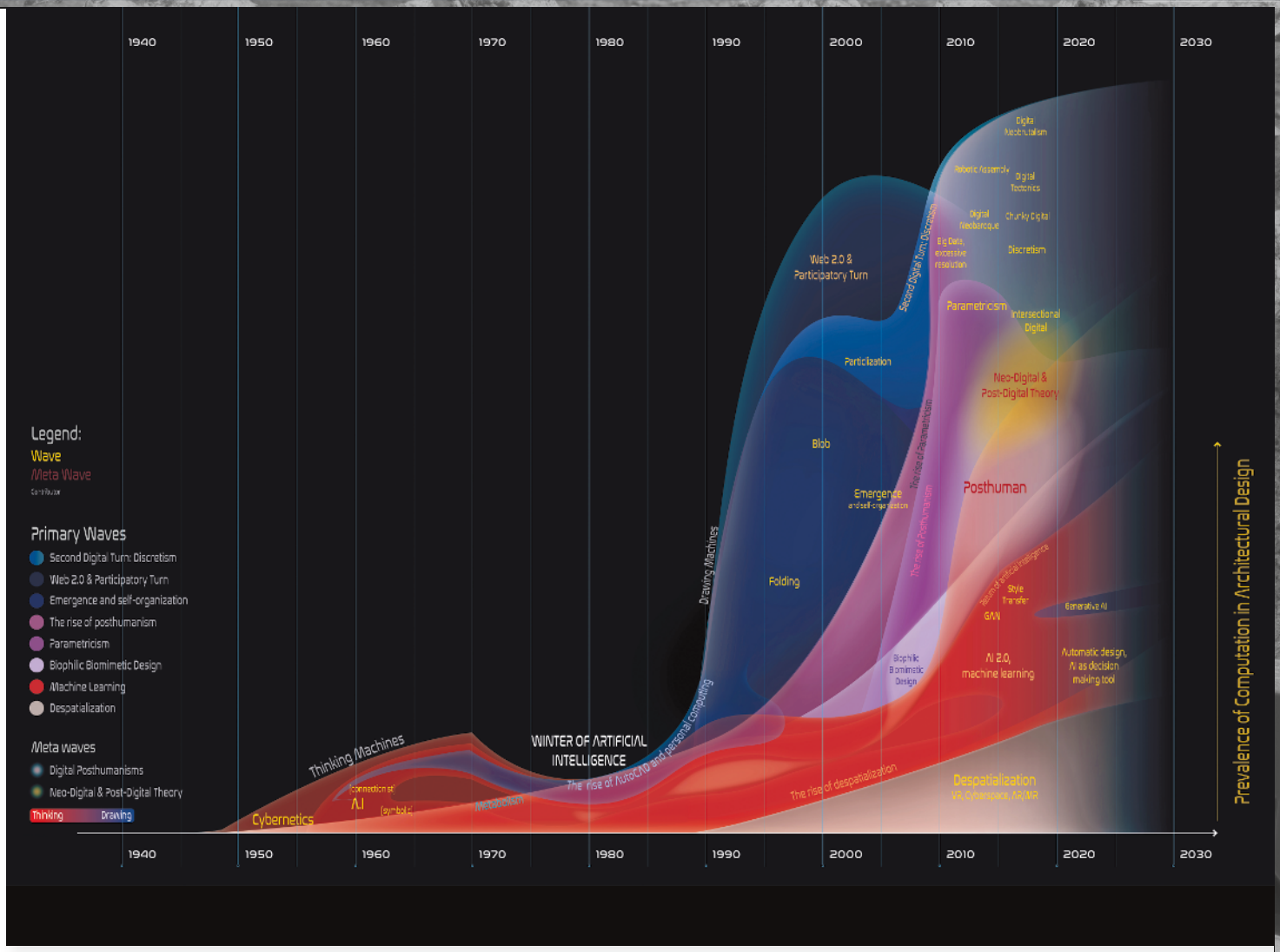
Alberto Fernández González and Mark Garcia,
Phase II Synthesis 851847497740d298991,
Posthuman AIchitectural Speculations,
2023

right: The result of a number of autophagous image-based and textual prompts for the terms 'posthuman architecture', this is the result generated by the artificial intelligence (AI). Apparently a hybrid of greenhouses, Google/Amazon-style mega-corporate campuses and planetary-based space architecture, landscape architecture and advanced digital design, this urban-scaled series of transparent/translucent dome-shell architectures is in an unspecified location and for an unspecified ecosystem of unknown inhabitant subjects.

Alberto Fernández González and Mark Garcia,
Phase II Synthesis no 6266214885470011558,
Posthuman AIchitectural Speculations,
2023

opposite bottom: An AI response to the words 'posthuman interiors' captures a synthesis of what appears to be multi-storey botanical, hydroponic or agricultural farming with a data centre, factory, laboratory, fulfilment centre, storage depot and perhaps even a corporate campus, transport or delivery interchange – all under a contemporary non-standard, digitally designed and manufactured glass or ethylene tetrafluoroethylene (ETFE) roof?




1940
1950
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2030
Legend:
Wave
Meta Wave
Primary Waves
Second Digital Turn: Discretism
Web 2.0 & Participatory Turn
Emergence and self-organization
The rise of posthumanism
Parametricism
Biophilic Biomimetic Design
Machine Learning
Despatialization
Meta waves
Digital Posthumanisms
Neo-Digital & Post-Digital Theory
Thinking
Drawing
Cybernetics
Thinking Machines
Connectionist AI
Metabolism
WINTER OF ARTIFICIAL INTELLIGENCE
The rise of AutoCAD and personal computing
Drawing Machines
Folding
Web 2.0 & Participatory Turn
Second Digital Turn: Discretism
Particlization
Blob
Emergence and self-organization
The rise of Parametricism
The rise of Posthumanism
Digital Materialism
Robotic Assembly
Digital Tectonics
Digital Neobaroque
Chunky Digital
Big Data, excessive resolution
Discretism
Parametricism
Intersectional Digital
Neo-Digital & Post-Digital Theory
Posthuman
Deep & artificial intelligence
Style transfer
GAN
Generative AI
Biophilic Biomimetic Design
AI 2.0, machine learning
Automatic design, AI as decision making tool
The rise of despatialization
Despatialization
VR, Cyberspace, AR/MR
Prevalence of Computation in Architectural Design





From a survey of the recent media (which includes speculative and fictional content from films, art, literature, television and 'new' and 'social' media), the three most salient and general groupings of indicators, qualities, elements and drivers of posthumanness (depending on the type of these that determines the architecture) are those prioritising or wholly consisting of, firstly, the biological/genetic; secondly, those privileging the abiotic digital-mechanical; and thirdly and most inclusively, a nonbinary nature-culture hybrid of the two former categories. This more expanded third 'posthuman' treats 'nature-culture' as a singular entangled term. The 'new' media of the third type in particular form the *de facto*, if not the *de novo* media of the most complex posthuman architectures being generated in the present. The result is that posthumanisms can be as mutually antithetical, polysemous, contested and contingent as Modernisms and Postmodernisms became.

Posthumanologies and Posthumanising Spaces

Leaving aside for now that some nonhumans display culture, technology and the ability to build, the first posthuman architectures were not only tents and huts but also found or augmented caves, hollow trees, arboreal platforms/nests or sheltered pits and tunnels. If we are already posthuman and live in an arguably posthuman world, then all architecture is (weakly) posthuman. In a stronger sense, posthuman architecture is architecture for or by posthuman subjects – humans, nonhumans or mixes of these. Posthuman architecture is also architecture that uses posthumans, is in posthuman locations or conditions, is for posthuman purposes, typologies and programmes or has posthuman elements. Posthumanisation is also a process – an architecture or space with a posthumanising affect or effect. In the context of the Third Machine Age and the Fourth Industrial Revolution, posthuman spaces and architectures are driving an architectural revaluation of values whereby posthuman architecture is the consequence of extending equality, diversity and inclusion (EDI) to all subjects and agencies. Posthuman EDI is *the* EDI. It is *the* spatial justice, as it includes zones beyond Earth.

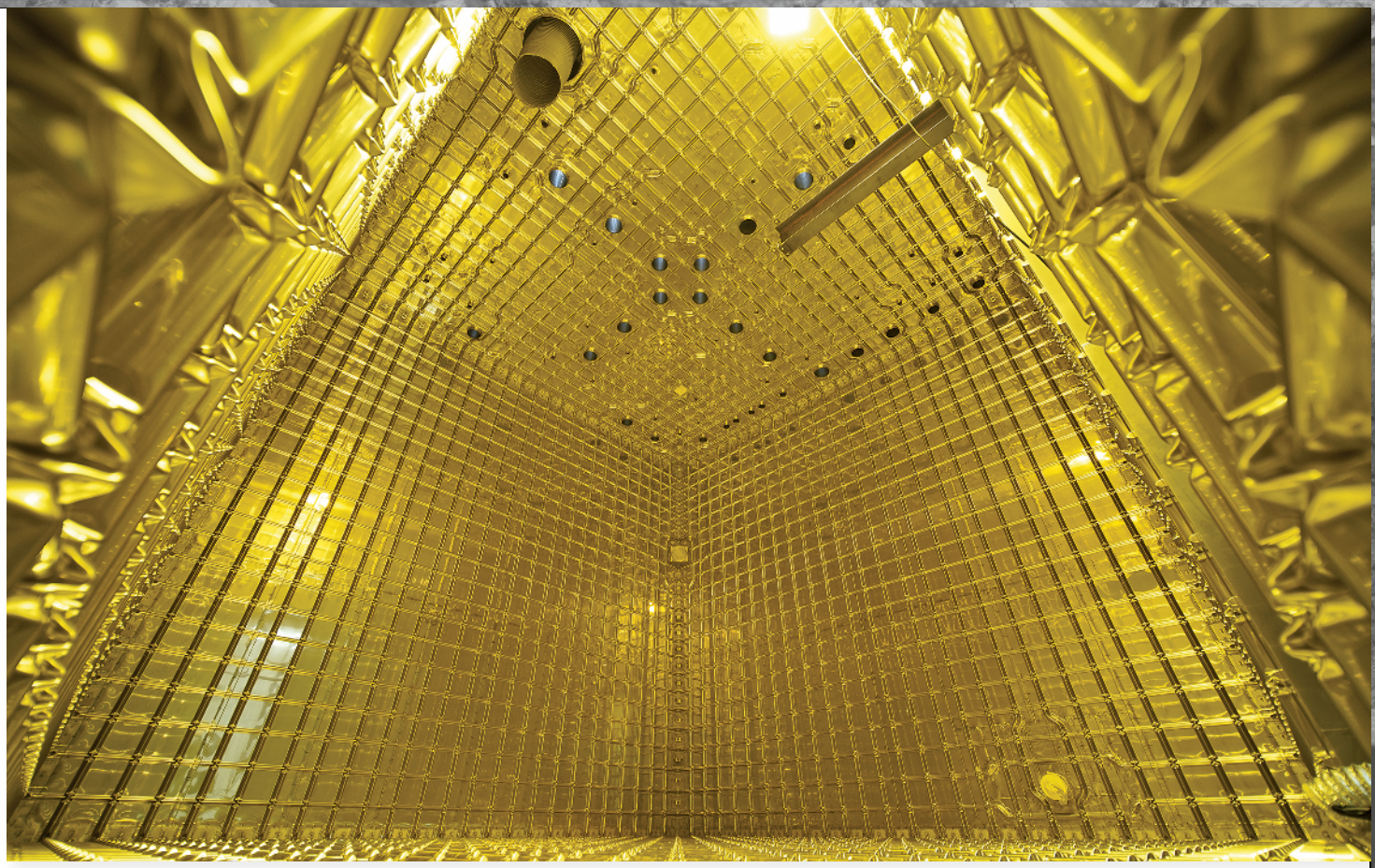
Historical and theoretical publications on posthuman architecture go as far back as K Michael Hays's *Modernism and the Posthumanist Subject* (1992)[7] but were still very few even after 2010. Less explicitly posthuman, Mark Wigley and Beatriz Colomina used 'Super-Humanity'[8] for the title of their Istanbul Design Biennial in 2020, whilst Liam Young in his *Δ Machine Landscapes* (2019) issue prefers 'Post-Anthropocene',[9] and for Andrés Jaque it is 'More-than-Human'.[10]

Some of the most posthuman examples of these include the International Thermonuclear Experimental Reactor (ITER) in southeastern France; the National Satellite Test Facility in Oxfordshire, UK; the US's Laser Interferometer Gravitational-Wave Observatory (LIGO) facilities in Hanford, Washington and Livingston, Louisiana; plus spaceports, recycling centres, augmented- and mixed-reality architectures, telescopes and observatories, neutrino detectors, zoos and aquariums, garages, datacentres, mission control centres, cleanrooms, the metaverse, botanical architectures, transport interchanges, cryogenic vacuum chambers, super-sewers, underwater sculpture parks, super-offices, oceanographic research stations, the Orfield Lab Anechoic chamber in Minneapolis (the quietest place on Earth), the 'Deep Dive' pool in Dubai (the world's deepest artificial pool), super-factories, quantum supercomputer labs, Apple's 'Smart Home', long-stay vehicles (eg submarines and cruise ships), automated/robotic farms, storage and preservation spaces, research and development (R&D) labs, wildlife reserves, airports, the internet and space architectures. But not all posthuman spaces (such as the Naica Crystal Caves in Mexico) are posthuman architectures.

The Red Room from *Twin Peaks*, Series 3, Episode 1, 2018

below: Twin Peaks is a posthuman total-artwork spanning over 25 years, seven music albums, three series over 48 episodes, 5 major books and a major cinema feature film. The Red Room has an interior but no exterior. One of the greatest and most famous rooms ever designed, it is the mission control for the town of Twin Peaks (designed by director David Lynch and Mark Frost from 1990 to 2018) and has its own but unknown agencies and forces that extend across the planet.







Stanford University and Fermilab,
Deep Underground Neutrino Experiment (DUNE),
between Illinois and South Dakota,
2023

above: Still under construction, DUNE is the world's most powerful neutrino experiment, consisting of a beam (1,300 kilometres (800 miles) long) and two detectors. Despite this prototype being a big gold room, the luxurious and hyper-futuristic avant-garde aesthetic is entirely technological, scientific, epistemic, materialist, ontological and metaphysical, being designed to discover the fundamentals of matter and the deep history and evolution of the universe.

And whilst there are dangers and limits in overextending posthumanisms and multispecies relationality (lots of life and technology is there to kill and/or eat us – including our own selves, in cancer), there is also the danger of not extending it far enough for, as the present climate crisis suggests, the posthuman problem of the place-design of the planet is the most contemporary and urgent architectural project of all.

On the edge of the speculative and design fiction, posthuman architecture includes exo- (off-Earth) and xeno- (alien) architecture.[11] Implausibly, one of the most posthuman architectures can also be presently and proleptically defined as that which actively indexes the entire *umwelt* and sensorium of all the possible perceiving stakeholders of the architecture itself.

A Metagram of Posthuman Space and Spatial Design

The most intelligent and urgent questions to ask about space or architecture are therefore more about which type of posthumanism is being implicated, and about not just whether it is posthuman enough, but in which ways it could and should be more so. It is these kinds of questions that preoccupy all the contributors to this issue – from academia and practice, researching in disciplines from architecture, interiors, engineering, the digital, interaction, product and vehicle design, urbanism, philosophy, fashion, theory, history, art, journalism, museology/curation and space architecture in the US, Austria, the Netherlands, Italy and the UK. That each responded in unique ways to this Δ is a measure of relevance and possibilities of 21st-century posthuman architecture.

The issue is structured in a narrative sequence starting with a core of theories and design(s), moving though technologies and futures, with case studies and more realised design projects interspersed throughout. The posthuman focus of each one or two articles alternates between the bio-, techno- and more hybrid posthumanisms, for each to enrich and question its precedessor and successor essays. A starter of Jacopo Leveratto's five-step 'cookbook' for bio-posthuman design is served, peppered with a variety of recent projects. Alberto Fernández González and myself use the posthuman intelligence of AI to define the aesthetics of posthuman architectures. From the B-Pro programmes at the Bartlett School of Architecture, University College London (UCL), Roberto Bottazzi, Tyson Hosmer and Mollie Claypool present the most recent and most posthuman student and research projects – demonstrating one of the fullest spectrums of posthuman design on the planet. Co-founder Ariane Lourie Harrison presents some of the most recent built projects from around the US of Harrison Atelier, one of the most explicitly posthuman teaching, research and professional offices. Focusing on the posthuman charm of fungi, Mario Carpo, Reyner Banham Professor of Architectural History and Theory at The Bartlett, historicises and theorises the digital entanglements of slime moulds into the architectural contemporary.



Professor and Chair of Fashion Studies at Columbia College Chicago Colbey Reid and Professor of Philosophy at York College of Pennsylvania Dennis Weiss extend their research on posthuman interiors into a critique of conventional digital technologies in the domestic realm with a series of artfully curated and surprising conclusions for our future posthuman residences, beyond simplistic 'smart homes'. Andrew Witt is Associate Professor in Practice of Architecture at Harvard University and co-founder of the Certain Measures design studio; his article concentrates on his built *Museum of the Future*, offering us a planetary posthuman *Wunderkammer* (cabinet of curiosities) of hybrid-high-tech and bio-posthumanisations. Sylvia Lavin, Professor of History and Theory of Architecture at Princeton University School of Architecture, goes back to the future by branching off with a case study of a cathectic apple tree – in a simultaneously prelapsarian, Modernist and ur-posthuman inverted *hortus conclusus* opening the posthuman in architecture then, for now, and always. We then land firmly in the zoological posthuman, with Bartlett lecturer Paul Dobraszczyk and architect and wildlife researcher Steven Hutt each taking fresh new perspectives on animal architectures. Whilst Dobraszczyk takes a hard and unblinking eye to the architectures of tame animals we farm and husband on lands around planet Earth, Hutt brings an eagle eye to the skies and 'flying-feral' aerial typologies.

Beyond the skies, beyond the Earth, a quartet of essays on space architectures completes this Δ. Olga Bannova and