

Unlocking the Metaverse

A Strategic Guide for the Future
of the Built Environment

Paul Doherty



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Table of Contents

[Cover](#)

[Table of Contents](#)

[Title Page](#)

[Copyright](#)

[About the Author](#)

[Acknowledgments](#)

[List of Acronyms](#)

[Introduction: How to Use This Book](#)

[Unlocking the Metaverse](#)

[The Method Behind This Book](#)

[Who is this Book For?](#)

[The Book Road Map](#)

[CHAPTER 1: Definitions](#)

[Metaverse](#)

[Digital Twin](#)

[Virtual Worlds](#)

[Blockchain](#)

[Fungible Token \(FT\)](#)

[Non-fungible Token \(NFT\)](#)

[Smart Contracts](#)

[Tokenomics](#)

[GPT](#)

[CHAPTER 2: Digital Twins, Virtual Worlds, and the Metaverse](#)

[Digital Twins](#)

[Gaming](#)

[Monetization](#)

[Virtual Worlds](#)

[Reality Capture and Motion Capture](#)

[Chase Olson - Reality Capture](#)

[Avatars](#)

[Avatar Interface](#)

[Avatars as Metahumans/Humanoids \(MoCap\)](#)

[NPCs as Reference Oracles](#)

[Virtual Worlds in the Metaverse Examples](#)

[Cybersecurity and Safety](#)

[Metaverse](#)

[Industrial Metaverse](#)

[Notes](#)

[CHAPTER 3: Metaverse Mechanisms and Solutions](#)

[Blockchain](#)

[Workflows](#)

[Capital Asset Delivery Using Smart Contracts](#)

[Workflow](#)

[Construction Documents as the Digital DNA of the Built Environment](#)

[Ethereum blockchain](#)

[Digital Twin](#)

[Geo Location and Workflow](#)

[Facility Management](#)

[Challenges](#)

[Governance in a Decentralized Digital Environment](#)

[Cybersecurity](#)

[Trust](#)

[Data](#)

[Avatars](#)

[Smart Contracts](#)

[Value Propositions](#)

[Increased Efficiency](#)

[Improved Data Collection and Analysis](#)

[Accurate and Trusted Facility Data and Information](#)

[Tokenomics](#)

[Woven Collisions: NFTs and the Metaverse](#)

[LOE](#)

[Real-Estate-Backed Digital Asset Securities](#)

[Web 3](#)

[AI](#)

[GPT](#)

[ChatGPT Model](#)

[Note](#)

[CHAPTER 4: The Crystal Ball](#)

[Scarcity and Abundance](#)

[Edge Computing](#)

[Censorship](#)

[Thought Leader Interviews](#)

[Damon Hernandez - The Metaverse](#)

[Hugh Seaton - Data](#)

[Cody Nowak - Process](#)

[Arol Wolford - The Industry's Future](#)

[Conclusion](#)

[Notes](#)

[Index](#)

[End User License Agreement](#)

List of Illustrations

Introduction

[Fig. 1: Expo2020 in Dubai Metaverse.](#)

[Fig. 2: Oracle Park in the Metaverse, home of the San Francisco Giants baseb...](#)

[Fig. 3: Cyberplaces book cover.](#)

[Fig. 4: Author Paul Doherty.](#)

Chapter 1

[Fig. 1-1: Expo2020 Metaverse in Dubai.](#)

[Fig. 1-2: Qingdao, China Virtual Reality Theme Park Metaverse.](#)

[Fig. 1-3: A virtual world in the Metaverse.](#)

[Fig. 1-4: Artificial Intelligence \(AI\) ChatGPT construction specification ex...](#)

Chapter 2

[Fig. 2-1: Expo2020 in Dubai Metaverse.](#)

[Fig. 2-2: Expo2020 in Dubai Metaverse.](#)

[Fig. 2-3: Expo2020 in Dubai Metaverse.](#)

[Fig. 2-4: Expo2020 in Dubai Metaverse.](#)

[Fig. 2-5: A Steampunck Avatar in the Metaverse.](#)

[Fig. 2-6: Zulu Nation-inspired architecture being built in South Africa, but...](#)

[Fig. 2-7: A metaverse party with multiple people who are able to interact in...](#)

Chapter 3

[Fig. 3-1: Expo2020 in Dubai Metaverse.](#)

[Fig. 3-2: Qingdao, China Virtual Reality Theme Park Metaverse.](#)

[Fig. 3-3: Qingdao, China Virtual Reality Theme Park Metaverse.](#)

[Fig. 3-4: GPT-style generated graphics using Midjourney on Discord.](#)

[Fig. 3-5: NFT galleries in the Metaverse.](#)

[Fig. 3-6: I asked AI to mashup Batman and myself and this was the result. I ...](#)

Chapter 4

[Fig. 4-1: AI-generated graphics in the Metaverse.](#)

[Fig. 4-2: An Abundance of Plenty.](#)

[Fig. 4-3: A TDG Metaverse.](#)

[Fig. 4-4: A Gatherverse.](#)

[Fig. 4-5: Metaverse environment of architecture as music to create a series ...](#)

Unlocking the Metaverse

**A Strategic Guide for the Future of
the Built Environment**

Paul Doherty

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About the Author

Paul is chairman and CEO of TDG (the digit group www.thedigitgroupinc.com) and NextGEN Entertainment, Inc. (www.nextgenentertain.com), and is a globally renowned and award-winning architect who is one of the world's most sought after thought leaders, strategists, and integrators of process, technology, and business. As noted in *The Wall Street Journal*, seen on Bloomberg TV, acknowledged by CNBC as one of America's Business Titans, and reported by Forbes as "Changing the World," Paul is a Senior Fellow of the Design Futures Council and a Fellow of the International Facility Management Association (IFMA). Paul currently works as chairman of TDG Global Ventures, a Smart City real estate development company that provides master planning, access to financing, program management, and innovative technology solutions around the world. Concurrently, Paul is the co-founder and producer of the critically acclaimed AEC Hackathon (www.aechackathon.com) that launched at Facebook Headquarters. His past successful ventures include Revit Technologies (Sold to Autodesk 2002), Buzzsaw (Autodesk 2001), and TRIRIGA (IBM 2011).

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List of Acronyms

AEC

architecture, engineering, construction

AI

artificial intelligence

API

application programming interface

AR

augmented reality

BIM

building information modeling

BPR

business process re-engineering

CAD

computer-aided design

DLT

distributed ledger technology

ESG

Environment Sustainable Governance

ETF

exchange traded funds

FM

facility management

GPT

generative pre-trained transformer

IBM

international business machines

ICT

information communications technology

IoT

Internet of Things

IP

internet protocol

IRL

in real life

OEM

other equipment manufacturers

TDG

The Digit Group, Inc.

VPN

virtual private network

VR

virtual reality

XR

eXtended reality and/or mixed reality

Introduction: How to Use This Book

This introduction will provide an overview and road map of the book's content to allow readers to have a clear understanding of how to use this book's information for their own valued use.

Unlocking the Metaverse

Welcome to *Unlocking the Metaverse: A Strategic Guide for the Future of the Built Environment*. When the physical built environment intersects with the digital world, not only is it a moment to pay attention to, but it's time to write a book about this historic moment. Welcome to a journey of unlocking the mysteries of the metaverse for the built environment and how these technologies, processes, workflows, and experiences will affect you, your business, and your lifestyle. My goals of writing this book are:

- ▶ To provide the background of how the definitions of our age are becoming our new reality.
- ▶ To provide the background and path forward of how our 3D graphic representation of the built world and its incorporation into storytelling has given rise to an enormous and influential Gaming Industry and how this affects the built environment.
- ▶ To expose opportunities to the incumbent and traditional professionals of the built environment as well as the cautionary tales of what the digital asset world has unleashed.
- ▶ To provide guidance and suggestions for how you, your company, and your lifestyle will be affected by the new

metaverse medium.

- ▶ To suggest practical advice on emerging data-driven innovations like Distributed Ledger Technology (Blockchain), Smart Contracts, and Tokenomics will give rise to the next generation of valuable digital real estate.
- ▶ To create vision to the emergence of Web3, Artificial Intelligence and when integrated into Metaverse environments, how it transforms the notion of a Cyber-Physical experience.
- ▶ And finally, to bring views from industry experts to look into the Crystal Ball to assist you in navigating this amazing transformative age we are experiencing ([Figure 1](#)).

My first experience of the metaverse was 1977, playing with my friend's Atari 2600 gaming console on a game called Pong. I was transfixed with seeing a home video game on a TV. By 1979, we had graduated to games like Asteroids, Space Invaders, and the beginnings of digital football, baseball, and ice hockey. I was not a big fan of the arcades like pinball games and other console games, but Pac-Man and Ms. Pac-Man were always fun and for a short period of time, allowed a form of escapism. Thus, my take that these home video games and arcades from the 1970s and 1980s were seeds for the promise of the oncoming of a new medium called the Metaverse.

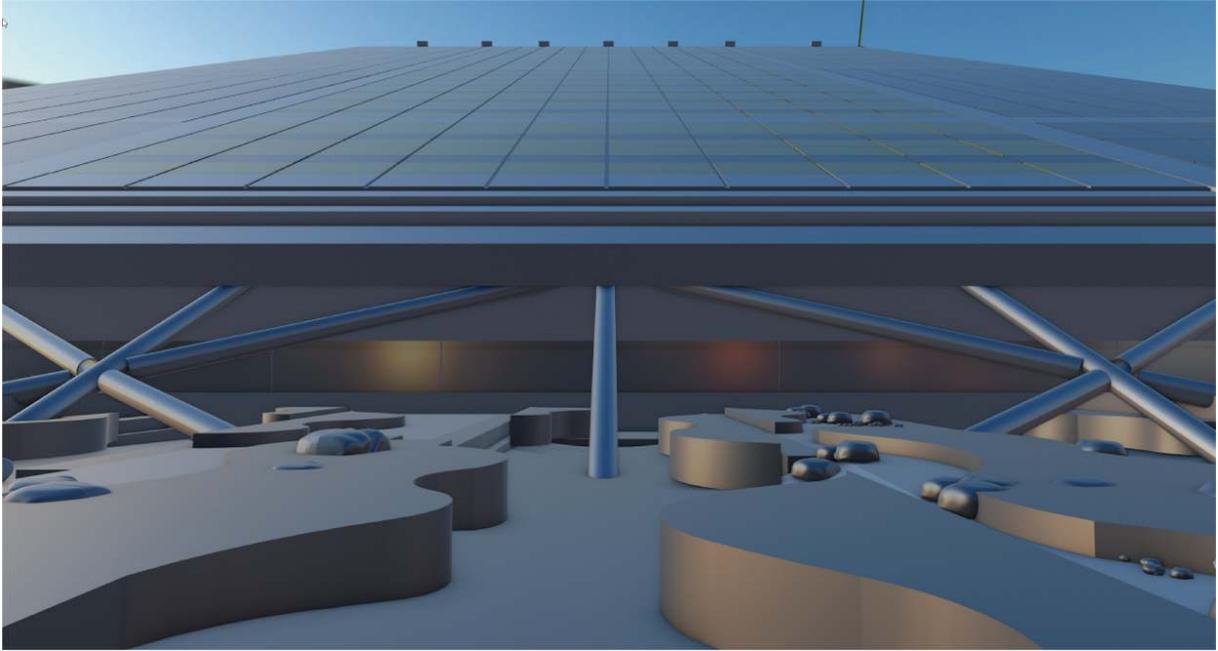


Fig. 1: Expo2020 in Dubai Metaverse.

Courtesy: Paul Doherty.



Fig. 2: Oracle Park in the Metaverse, home of the San Francisco Giants baseball team.

Courtesy: Paul Doherty.

As computing power increased and storytelling matured, I was enamored in 1993 with the multimedia adventure game called *Myst*, by Broderbund. I used my Apple Macintosh with a *Myst* CD-ROM disk to propel me into a fictional world where I would spend hours unlocking mysterious clues in a never-ending game. The 1990s were full of milestones for the maturity of the Metaverse, with the rise of the Internet and its adoption in the later part of that decade and Neal Stephenson coining the term “Metaverse” in his cyberpunk novel *Snow Crash* in 1992 to describe an online, Virtual Reality (VR) world where the inhabitants of humankind could interact and escape the dystopian unpleasantness of the real world ([Figure 2](#)).

In fact, in 1996, I was an advisor to companies that were working on the new San Francisco Giants baseball stadium. The designers wanted to have stakeholders experience what the views were from seats in the new stadium before it was built and did not want to purchase expensive design software just for viewing the 3D model. Our team, led by Planet9, worked with a new technology for its time called Virtual Reality Markup Language (VRML) that allowed the 3D model of the new stadium to be viewed and interacted with inside a Web Browser. I documented the process and images in my 1997 book called *Cyberplaces: The Internet Guide for Architects, Engineers and Contractors* published by R.S. Means. When I hear about people claiming that today they are creating the Metaverse or are self-proclaimed experts regarding the Metaverse, I shake my head knowing that the world has many charlatans, as I literally wrote the book on the emerging medium of the metaverse in 1997. This validation is brought forward into today's world through the valuable work of so many talented people over the decades that has led us collectively to this moment in time and with you reading this book ([Figure 3](#)).

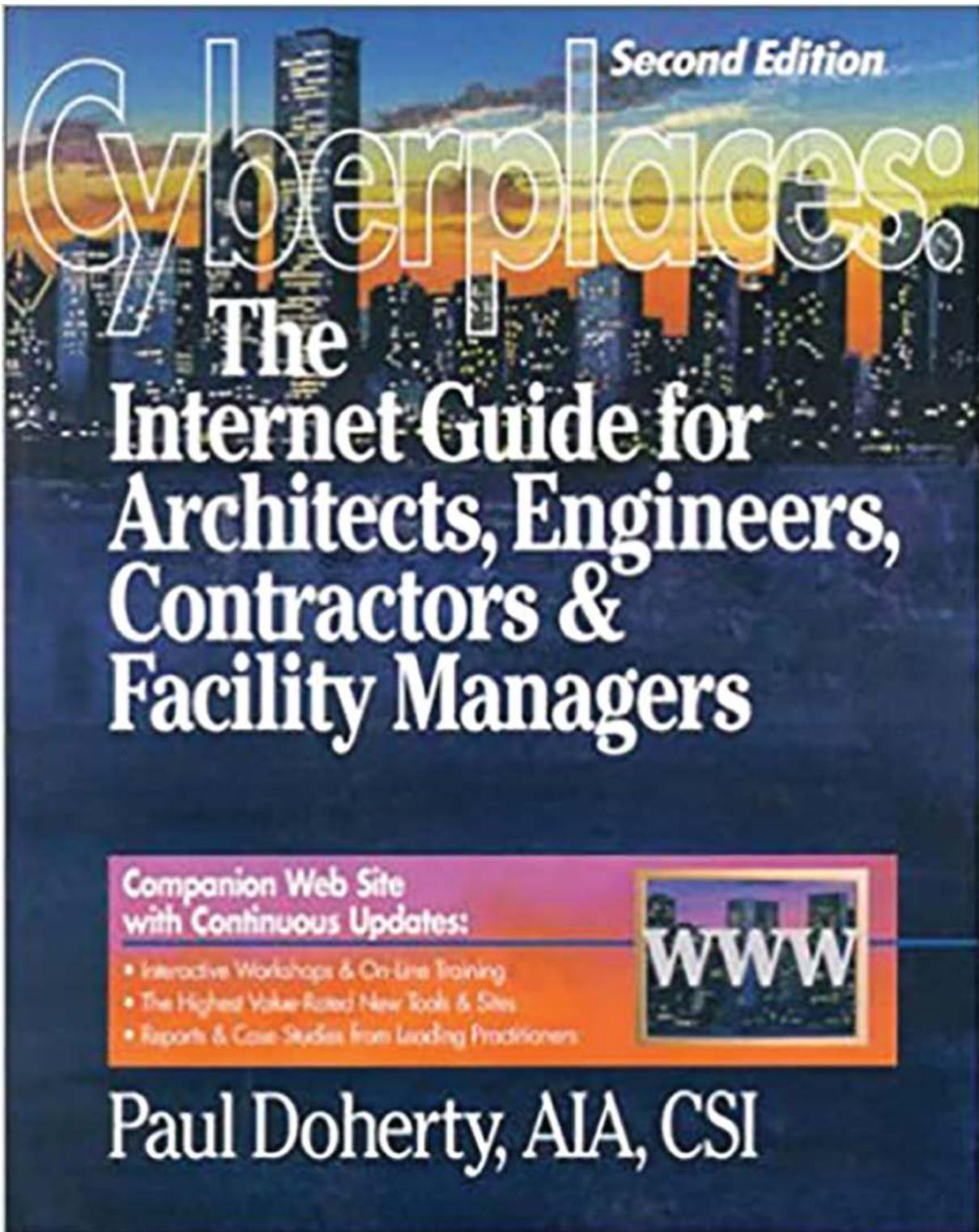


Fig. 3: Cyberplaces book cover.

Courtesy: Paul Doherty.