Virtual Design & Construction Professional Education

PROGRAM

Stanford | ENGINEERING
Center for Global & Online Education

ABOUT THE PROGRAM

Technological innovation is transforming the Architecture, Engineering, and Construction (AEC) industry, making smart practices essential for sustainable success.

Stanford's Virtual Design & Construction (VDC) professional education program is designed to transform how you and your organization execute projects. Led by Stanford faculty and seasoned industry experts, the program equips you with the skills to deliver projects right the first time—by aligning teams and objectives, reducing rework, and driving predictable outcomes.

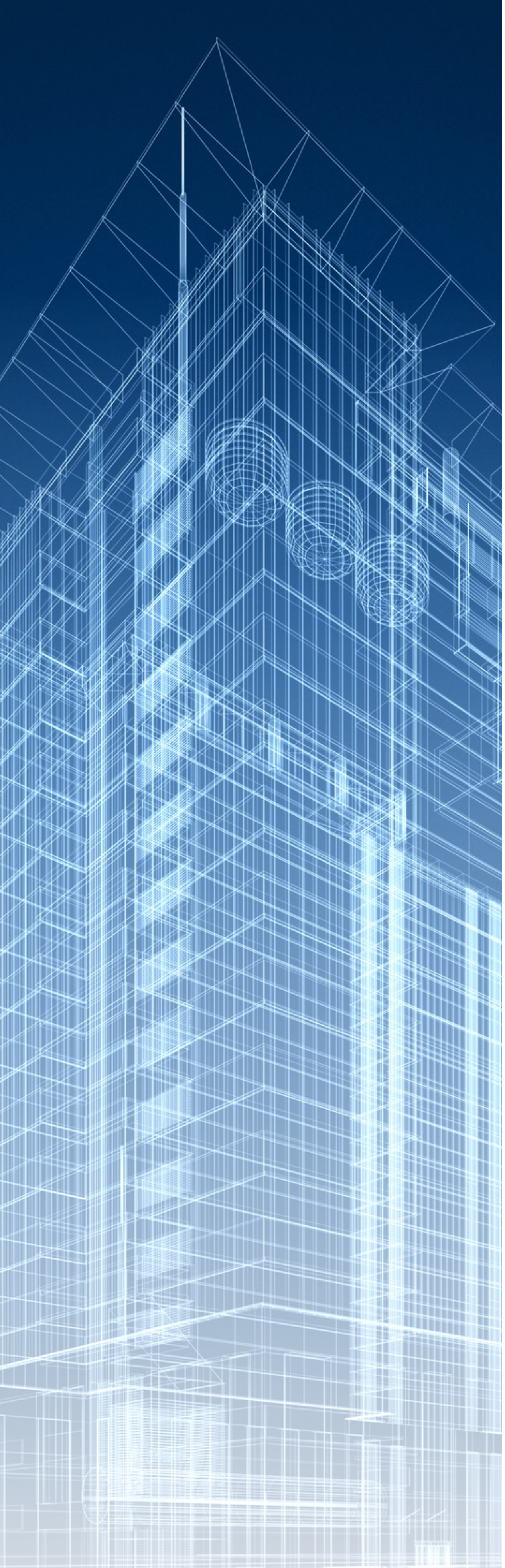
With over 1,000 professionals in client, design, and construction organizations certified across the USA, Europe, and South America, Stanford's VDC program fosters a dynamic community dedicated to maximizing your organizations' ability to deliver high-value projects on time and within budget.

QUICK FACTS

DELIVERY:
A combination of in-person, live virtual, and online

ESTIMATED HOURS TO COMPLETE:
100-125

CERTIFICATE EARNED:
Stanford Certificate of Achievement



OVERVIEW

Virtual Design and Construction (VDC) uses multidisciplinary digital models to create a virtual project prior to construction, facilitating better project definition, planning, and management.

VDC was first introduced as a concept by Professor Martin Fischer, Director of the Center for Integrated Facility Engineering at Stanford, a part of the Stanford School of Engineering, based on his research which delves into how to improve the productivity of project teams involved in designing, building, and operating facilities and how to enhance the sustainability of the built environment. Since 2008, Stanford's Center for Integrated Facility Engineering (CIFE) has equipped AEC professionals with the skills to drive high-value outcomes.

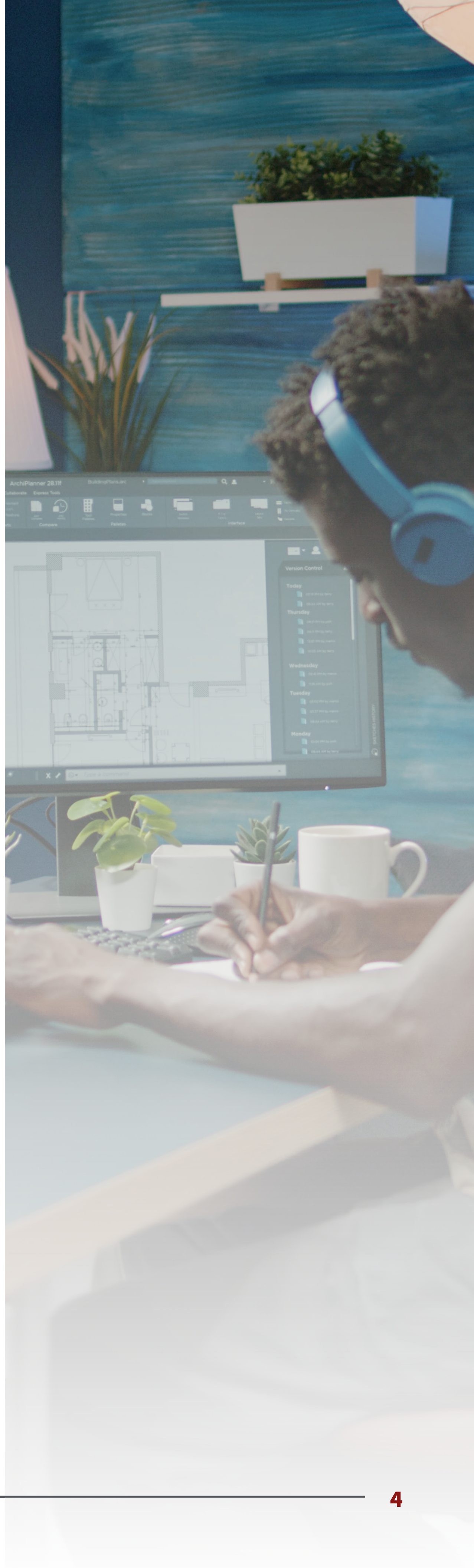
Learn directly from Professor Fischer and industry experts via a combination of online and in-person educational sessions offered through the Stanford Engineering Center for Global & Online Education. This program helps you and your organization tackle the industry's transformation challenges with highly tailored content—combining customized learning paths and a curated selection from our ready-to-enroll portfolio. You'll apply VDC principles and methods to real-world projects and see tangible results within the duration of the program and beyond. And through close collaboration with leading professional organizations worldwide, you'll also gain industry-relevant insights that are adapted to your local context and practical challenges.

INTENDED AUDIENCE

If you're a specialist or manager in planning, construction, or real estate, this program is designed for you. It's ideal if you're focused on optimizing work processes at a strategic or operational level. You'll learn how to integrate digital methods into your approach and enhance your skills with advanced methodologies and technologies.

LEARNING OBJECTIVES

- **Gain expertise in digital project management** using methods like Building Information Modeling (BIM) and Common Data Environments (CDE), leveraging these approaches to enhance team performance and project outcomes.
- **Understand the application of VDC to unlock the advantages of integrated project approaches,** including Integrated Project Delivery (IPD) and Design-Build, and foster collaboration and alignment.
- **Implement a systematic, continuous improvement process** to refine project execution and drive better results.
- **Develop collaborative, goal-oriented solutions** through structured problem-solving techniques.
- **Master collaborative planning, management, and execution strategies** to boost overall project success.
- **Create a vision, strategy, and implementation roadmap** to achieve both business and project goals with clarity and purpose.



KEY PROGRAM FEATURES

- **Expert Instruction:** Gain insights and guidance through personalized coaching from experienced mentors (industry practitioners and colleagues), who are knowledgeable industry practitioners, to apply VDC, prioritize objectives, optimize workflows, and leverage multi-disciplinary knowledge.
- **Professional Practicum:** Gain hands-on experience by implementing VDC in your field through a focused practicum. Complement your learning with a self-paced VDC course from Stanford University.
- **Project Progress Check-Ins:** Share your progress in monthly reports and receive constructive feedback from mentors and peers to refine your approach.
- **Integration Workshop:** Present your VDC implementation results, insights, and lessons learned. Receive expert guidance to shape your VDC strategy for future projects and company growth.

PROGRAM OUTLINE

→ Introductory Week

Kick off with a deep dive into VDC concepts through real-world examples. Develop and refine your VDC Implementation Plan with guidance from Stanford faculty and industry mentors in interactive workshops.

Learn how to manage project information using visualization, integration, and automation. Explore project production models, Integrated Concurrent Engineering for impactful collaboration, and strategies to align production goals with safety, quality, schedule, cost, and sustainability. Each day includes concept overviews, practical examples, and hands-on workshops with personalized feedback. By the week's end, you'll create your own VDC implementation plan, receiving expert input to set you up for success.

→ Continuous Education: Application, Learning, and Mentorship

Apply the VDC methods from the introductory week directly to your projects or job role, with monthly reports on your successes, challenges, and insights. Receive ongoing support through mentor feedback sessions, online VDC courses from Stanford, and a live-virtual midterm workshop.

Over the next seven months, you'll build your VDC expertise through hands-on practice, guided by regular check-ins with industry mentors and a community of peers. This practical approach will boost your confidence and skills to lead VDC initiatives in your organization. The midterm workshop will reinforce core concepts and address areas needing further development.

→ Program Conclusion

Participate in a two-day integration workshop, where you'll present your final report and engage in a collaborative learning experience with fellow participants to solidify your VDC competence and chart the course for continued success in applying VDC, guided by Stanford faculty and industry mentors.

PROGRAM DIRECTOR

Martin Fischer

Kumagai Professor in the School of Engineering
Civil and Environmental Engineering, Stanford University
Director of the Center for Integrated Facility Engineering

Professor Fischer aims to boost the productivity of project teams in design, construction, and operations while enhancing the sustainability of the built environment. His research advances the theory and application of Virtual Design & Construction (VDC), supporting efficient facility design and delivery to reduce costs and maximize lifecycle value. His work has been adopted by numerous organizations worldwide, from small businesses to large industrial and government entities.

TESTIMONIALS

> Thanks to our participation in this program, we've adopted the VDC model into our project execution framework—resulting in measurable improvements across efficiency, collaboration, and overall business performance.

> VDC showed me how to reduce design and construction coordination risk dramatically and meet project milestones reliably and on budget.

> The VDC program fosters an incredible sense of community. I've connected with inspiring professionals from around the world and built a network that continues to support and challenge me long after the program.

> The VDC program stands out on the global stage because of its extended format—spanning several months to a full year. Unlike shorter courses, it allows you to apply what you learn directly to your job in real time. The integration of theory and practice throughout the program makes the learning experience both immediate and lasting.

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