



# MICHIGAN STATE UNIVERSITY

Presents



Project by - TechnoStruct LLC

## BIM-READY<sup>®</sup> COMPLETE

Global Academic Partner- TechnoStruct Academy

**MICHIGAN STATE**  
UNIVERSITY

School of Planning, Design  
and Construction

# MICHIGAN STATE UNIVERSITY

## HOME OF THE SPARTANS

Michigan State University (MSU) stands as a beacon of academic excellence and innovation, etching its mark as one of the premier institutions in the United States. Nestled in East Lansing, MSU stands as a rich legacy of over 165 years, shaping the minds of countless leaders, thinkers, and professionals.

Renowned for its top-tier research, diverse academic programs, and commitment to fostering a vibrant community, MSU stands at the forefront of higher education. It offers a diverse array of courses spanning various disciplines, from engineering and business to arts and sciences, catering to students' diverse academic interests. With over 200 undergraduate and graduate programs, MSU provides opportunities for students to pursue their passions and excel in their chosen fields.

Ranked Amongst  
**Top 100**  
Global  
Universities

**17**  
Degree Granting  
Colleges

**700+**  
Student Clubs &  
Academic  
Organizations

**50,000+**  
UG & PG  
Students

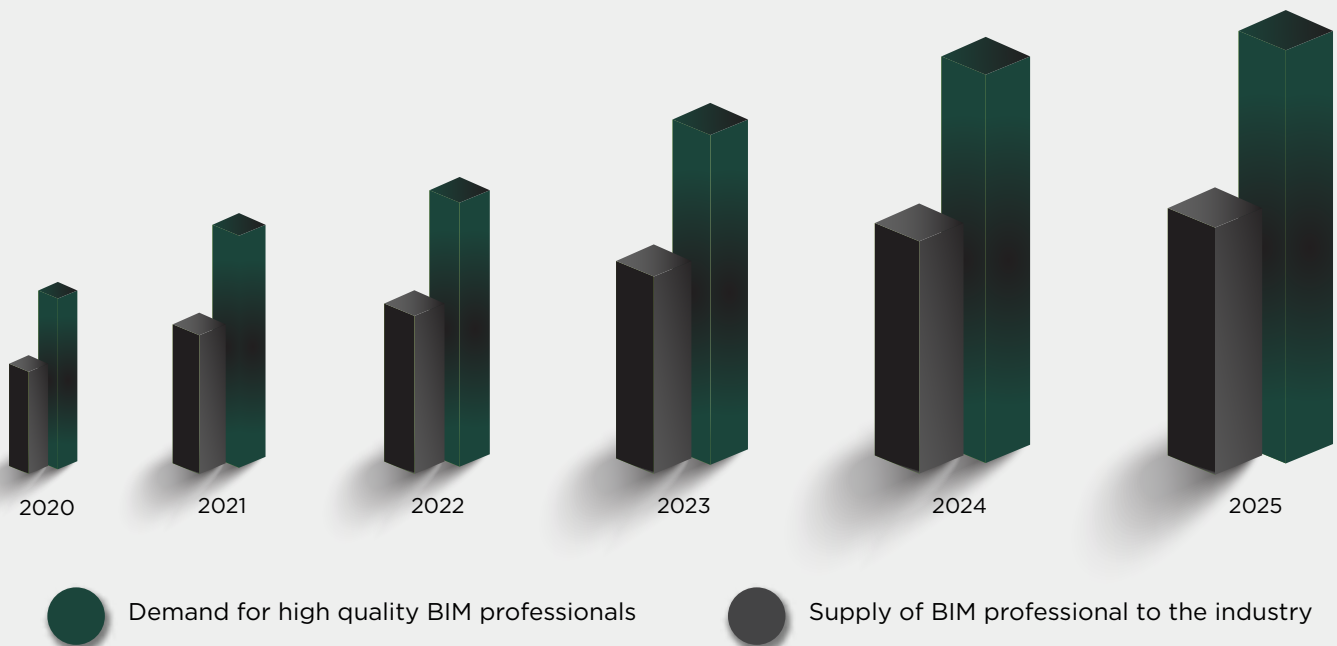
More information on MSU can be found at: [msu.edu](https://msu.edu)



## What is BIM?

Building Information Modeling (BIM) is a collaborative process, allowing multiple stakeholders like architects, engineers, and construction (AEC) professionals to work together on the planning, designing, and construction of projects through a 3D model. It provides a real-time update at each stage of the process

### Supply Demand Analysis of BIM Industry



Demand for high quality BIM professionals is rising

The supply of BIM professionals in the industry is very less

There is a huge talent void in the industry which needs to be filled.

## What is BIM-Ready<sup>®</sup> Complete ?

**BIM-Ready Complete** is an **ACCE (American Council for Construction Education)** accredited, industry-focused BIM program designed to build complete end-to-end BIM capability.

Built on **ISO 19650** and **Open BIM workflows**, the program combines standards, hands-on modeling, coordination, data intelligence, and automation through real-world project delivery. Participants graduate with a **practical, future-ready BIM skillset** and a strong professional portfolio for advanced roles in the AEC industry.



## Course Highlights

- **Global BIM Excellence**

Designed in alignment with ISO 19650 and Open BIM standards, ensuring international compliance and best practices.

- **End-to-End BIM Mastery**

Comprehensive coverage from BIM management and modeling to coordination, data intelligence, and automation

- **Management + Technical Expertise**

Develop proficiency in EIR, BEP, CDE workflows, alongside multi-disciplinary BIM modeling.

- **Data-Driven BIM Intelligence**

Convert BIM data into executive dashboards for quantities, progress, clashes, and KPIs.

- **AI-Enabled Automation**

Leverage AI and Dynamo to automate workflows, enhance model intelligence, and improve productivity.

- **Real-World Project Delivery**

Final thesis based on a Real-world industry project, resulting in a portfolio-ready BIM deliverable.

- **Future-Ready Skillset**

Built for professionals aiming for BIM Lead, BIM Manager, and Digital Delivery roles.



## Who can apply?

- ✔ Architects, Structural & MEP Engineers
- ✔ BIM / CAD Professionals & Coordinators
- ✔ Project Managers & Construction Professionals
- ✔ Quantity Surveyors & Cost Estimators & Managers
- ✔ Final-Year Students & Recent Graduates (AEC)
- ✔ Organizations upgrading to ISO 19650 BIM workflows



# Curriculum

Module No.	Module Name	Hours
Module 1	ISO 19650 BIM Standards and Open BIM Workflows	07
Module 2	BIM Management - EIR, BEP	14
Module 3	Basics of BIM Modelling	32
Module 4	Model based Quantity Validation (BOQ)	05
Module 5	Advanced BIM Coordination (Navisworks + Revizto)	10
Module 6	Coordination Meetings & Real-World Interaction Skills	03
Module 7	Common Data Environment Setup & Workflows	04
Module 8	Change Management, Model Auditing & Risk Tracking	03
Module 9	BIM for Data Visualization using Power Bi Dashboards	04
Module 10	AI & Automation in BIM	10
Module 11	Final Thesis Submission	08

**Total - 100 hrs**

## Optional Modules (Self-Paced Pre-Recorded Sessions)

Module 12	Advanced Architecture & Structure Modeling	20
Module 13	Advanced MEPF Modeling	20

**Total - 140 hrs**

# Academic Curriculum

07 Hours

## Module 01

### ISO 19650 BIM Standards & Open BIM Workflows

- Introduction to ISO 19650 series and its practical application.
- BIM goals, uses, LOD/LOI definitions.
- Open BIM concepts and interoperability (IFC, BCF).
- Aligning organizational BIM processes with international standards.

#### Outcome:

Understand global BIM standards and structured workflows.



14 Hours

## Module 02

### BIM Management – EIR & BEP

- Employer's Information Requirements (EIR): structure and intent.
- Pre-contract & Post-contract BIM Execution Plans (BEP).
- Information management principles across the project lifecycle.
- Practical case studies on BIM management documentation.

#### Outcome:

Ability to **prepare, review, and manage BIM documentation** for real projects.

**plannerly**

32 Hours

## Module 03

### Basics of BIM Modelling

- BIM modeling principles and best practices.
- Discipline-specific(Arch,Struct, MEPf) modeling workflows.
- Parametric modeling concepts.
- Model structuring, worksets, naming conventions.

#### Outcome:

Strong hands-on BIM modeling skills.



05 Hours

## Module 04

### Model-Based Quantity Validation (BOQ)

- Model-based quantity extraction principles.
- Linking BIM models to BOQ requirements.
- Quantity validation and error identification.
- Comparison between traditional and BIM-based BOQs.

#### Outcome:

Ability to use BIM models for **accurate quantity take-offs and validation**.



10 Hours

## Module 05

### Advanced BIM Coordination

- Coordination workflows and federation of models.
- Clash detection, classification, and resolution strategies.
- Issue tracking and collaboration using Revizto.
- Coordination reporting and stakeholder communication.

#### Outcome:

Hands-on expertise in delivering **clash-free coordinated models** using industry tools.



03 Hours

## Module 06

### Coordination Meetings & Real-World Interaction Skills

- How to plan, lead, and document BIM coordination meetings.
- Driving issue resolution with consultants and trades.
- Meeting etiquette, agenda preparation, and follow-up tracking.
- Communication strategies, trade pushback management, and escalation workflows.

#### Outcome:

Ability to **participate in and lead BIM coordination meetings**, communicate effectively with project stakeholders, and escalate issues before the impact project schedules.



04 Hours

## Module 07

### Common Data Environment (CDE) Setup & Workflows

- CDE concepts as per ISO 19650.
- Folder structures, naming conventions, and permissions.
- Approval workflows and version control.
- Information exchange and audit trails.

#### Outcome:

Manage project data in a structured **Common Data Environment**.



03 Hours

## Module 08

### Change Management, Model Auditing & Risk Tracking

- Tracking design changes across model versions
- Identifying scope gaps and coordination risks
- Assessing schedule impacts from unresolved clashes
- Managing model rework risks and change documentation

#### Outcome:

Ability to **identify, track, and manage BIM-related changes and risks**, minimizing rework and schedule impact in live construction projects.



04 Hours

## Module 09

### BIM for Data Visualization

- Transform BIM Data into Actionable Insights.
- Integrating BIM data with Power BI.
- Creating dashboards for project monitoring.
- Visualizing quantities, clashes, progress, and KPIs.

#### Outcome:

Ability to create **interactive dashboards** for BIM-driven decision making.



10 Hours

## Module 10

### AI & Automation in BIM

- Introduction to AI applications in AEC.
- Automation using Dynamo / scripting concepts.
- Rule-based checks and model intelligence.
- AI-driven insights for design, coordination, and QA.

#### Outcome:

Understanding how **AI and automation enhance productivity and BIM intelligence.**



08 Hours

## Module 11

### Final Thesis Submission

- Real-world project & industry-oriented case study.
- BIM execution strategy and deliverables.
- Model coordination, documentation, and presentation.
- Final review and evaluation.

#### Outcome:

A **portfolio-ready BIM project** demonstrating practical competence.



# Optional Modules (Self-Paced Pre-Recorded Sessions)

20 Hours

Module 12

## Advanced Architecture & Structure Modeling

- Advanced architectural modeling techniques.
- Complex structural systems and reinforcement concepts.
- High-detail modeling and performance considerations.



20 Hours

Module 13

## Advanced MEPF Modeling

- Advanced HVAC, electrical, plumbing, and fire systems.
- High-level coordination readiness.
- Best practices for constructible MEP models.



## Software you will learn



## Certifications



School of Planning, Design  
and Construction  
**MICHIGAN STATE UNIVERSITY**



Certification



Work Experience Certificate from  
TechnoStruct LLC, California



## Course Information

Course Duration	5 Months
Language	English
No of Modules	11+2(Optional Module)
Certificate issued by	School of Planning, Design, & Construction at Michigan State University
Eligibility	Architecture, Civil, Mechanical, and Electrical Engineering students or professionals

# Student Portfolio



**Jake Bosworth**  
**Virtual Design & Construction Manager**  
 Granger Construction



[View portfolio link](#)

## Jake | April 2024 Batch

A meticulous BIM Designer and VDC Manager, Jake specializes in developing detailed specifications and instructions for diverse MEP systems. With a 19-year career built on accuracy and quality-driven results, he is an expert at managing complex files and technical components. Jake is now prepared to bring his extensive industry expertise to new professional challenges.



### Tom Izzo Football Building East Lansing, Michigan

• Role: *Electrical Designer Engineer*

Description:

- Design netting system around the prison as a third layer of security.
- Design was also intended to keep drones from flying into the person.



**Hunter Point Shipyard Block 52 & 54 San Francisco, California**

• Role: *BIM Modeler*

**DESCRIPTION:**

- Developed detailed 3D models for both architectural and structural elements using Revit, ensuring comprehensive integration of design components.
- Designed, created, and maintained a robust set of parametric and structural models, providing clear specifications and dimensions for construction.
- Re-modeling, updated and refined 3D models of MEP in Revit for enhanced accuracy and integration with architectural elements.
- Clear, detailed, and consistent data definition and coordination for MEP systems, ensuring seamless coordination and reducing potential issues.

**Evolve Electric Experience**

- Adding more value to REVIT models, Coordination, and field productivity.
- Modeling add-on for Revit to model MEP.

RUN ID:	FR-01	3"
TOC:	11' - 4 3/4"	
L:	9' - 4 7/16"	
START:	PNL-1	
FINISH:	PNL-2	

KICK 90

POINT SADDLE

3 POINT SADDLE

# Student Portfolio



**Alessandro Kum**

**BIM Engineer**

Interprojekt



[View portfolio link](#)

## January 2025 Batch

Alessandro is a motivated and detail-oriented **BIM Engineer** with hands-on experience in BIM modeling and coordination using tools such as **Revit & Navisworks**. He is passionate about digital construction, data-driven BIM workflows, and continuously developing his technical and communication skills for global BIM environments.



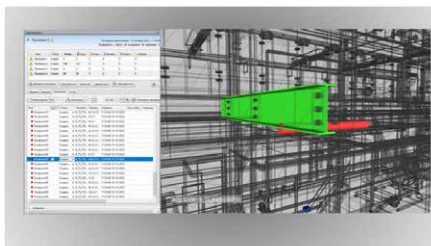
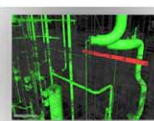
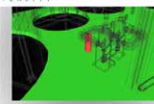
Visualization of the BIM Model



Site Location



Clash Detection in BIM Model



# Student Portfolio



**Kevin Maliszewski**

**SR. Design Engineer**

Commercial Contracting Corporation



[View portfolio link](#)

## Jan 2025 Batch

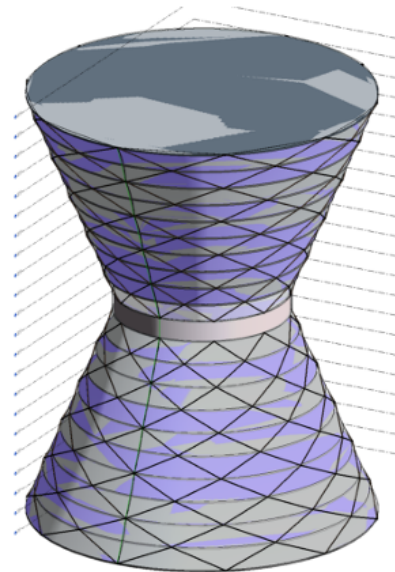
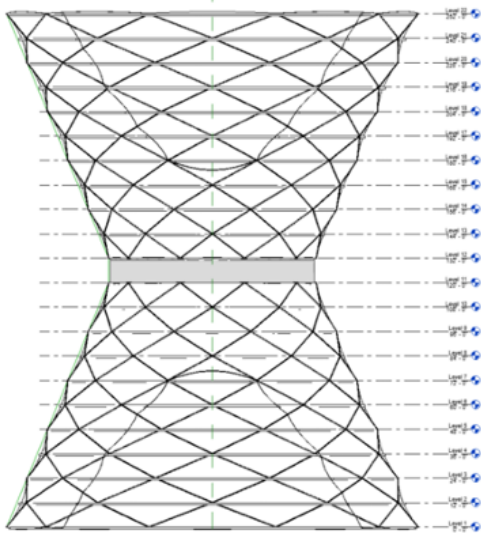
Kevin is a highly experienced Design Engineer and BIM Professional with **44 years of industry experience** across structural, paint finishing, and process engineering disciplines. He is **BIM certified** with a strong focus on constructability, safety, and coordinated project delivery, bringing deep practical insight into real-world, BIM-driven construction environments.



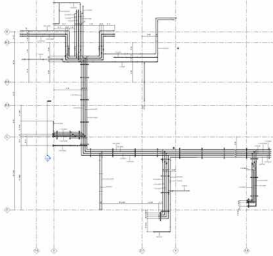
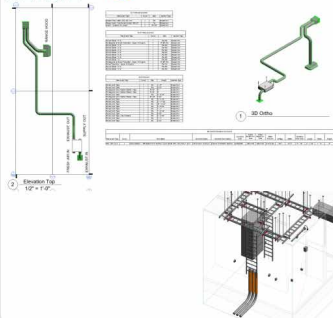
## ISO of All Glass Tower with Structural Basket Weave Framing

Ground Floor = \$500 sqft    Top Floor = \$2500 sq ft

Selling Out Fast – Views All Around – Sunset / Sunrise



### Mechanical & Electrical Systems



### Project Permanent Financing

Financing Source	Amount
Total OCII Subsidy	\$61,838,820
OCII Loan: 557,000,430	
OCII Site Development Agreement: \$4,838,390	
Private mortgage	\$2,410,462
Federal Tax Credit Equity	\$61,915,175
IG	\$5,913,900
Deferred fee	\$802,284
<b>Total Development Cost</b>	<b>\$132,880,642</b>
<b>Total Cost Per Unit</b>	<b>\$1,186,434</b>

- High development cost drivers unique to this Project:
- Project limited to 50% AMI max by Phase I DDA
  - Additional units at 30% & 40% AMI
  - Scattered site with two separate buildings
  - High proportion of larger family units (3, 4 & 5 bedrooms)
  - Higher parking ratio – additional excavation



TechnoStruct Academy &  
School of Planning, Design and Construction  
Michigan State University

Award this certificate to

**Robert Edwin Lumbera**

In recognition of successful completion of  
Advanced Postgraduate Training in Building Information Modeling

January 2025



Parth Makwana  
TSA Training Coordinator

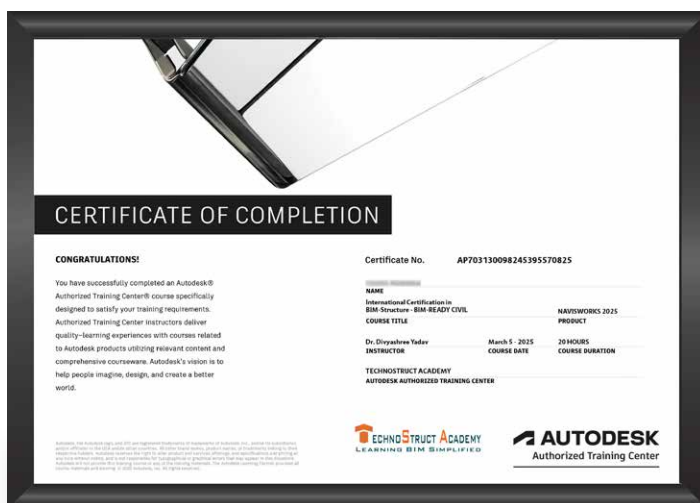
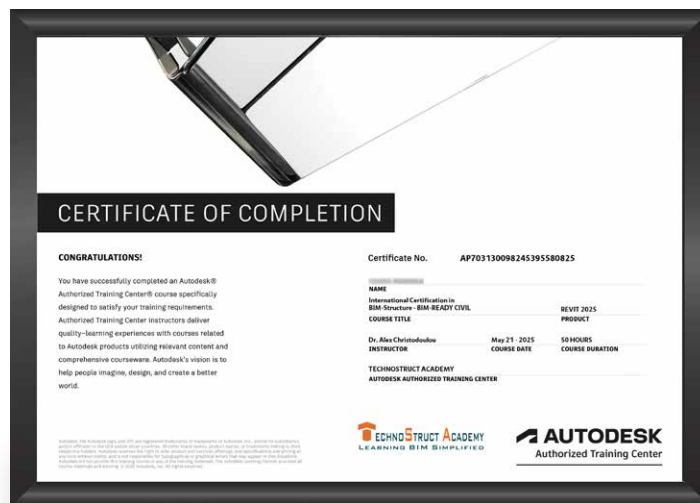


Armin Yeganeh, Ph.D  
MSU-SPDC Training Coordinator



Advanced Postgraduate Training in  
**Building Information Modeling**

# Gain 2 Official Autodesk Certifications: Industry-Recognized Globally!



TechnoStruct Academy: An Autodesk Authorized Training Center (ATC)

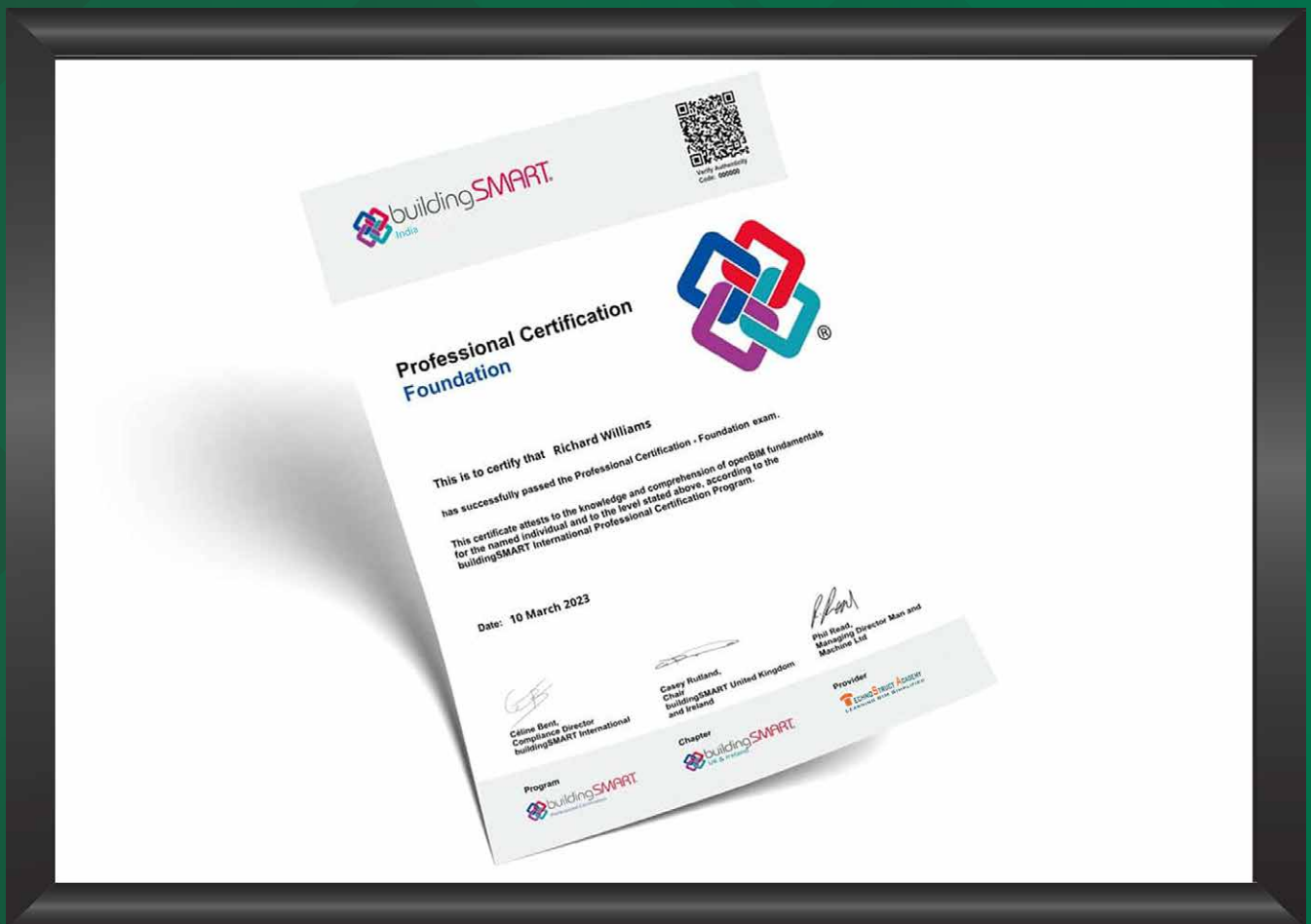
# Become an ISO 19650 Certified BIM Professional

with  **buildingSMART**  
Professional Certification – Foundation

the Original Authority.

BuildingSMART  
Certification  
(Optional)

**\$110**



# Work Experience Letter From TechnoStruct LLC, CA, USA



Date: Monday, 10 February 2025

To Whomever It May Concern

This is to certify that **Students Name** has completed the **International Certification in BIM Modeling & Coordination** course successfully. The certificate is enclosed with this letter.

The course included **120** days of classroom training with an **integrated internship** for the period **9th April 2024 – 20th December 2025**. As an intern, they have worked on an **affordable living and community space project** with a total built-up area of approximately **165,830 square feet** for the project **HUNTERS POINT SHIPYARD BLOCKS 52 & 54** and a **healthcare project** with a total built-up area of approximately **301,435 square feet** for the project **San Jose Behavioral Health Hospital**.

The project description is as follows:

- ✚ Project Name: HUNTERS POINT SHIPYARD BLOCKS 52 & 54
- ✚ Project Location: 151 & 351 FRIEDEL St, USA
- ✚ Project Area: 165,830 square feet
- ✚ Scope of Work: Creation of BIM Models, BIM Coordination, Extraction of shop drawings and BOQ.
  
- ✚ Project Name: San Jose Behavioral Health Hospital
- ✚ Project Location: San Jose, California
- ✚ Project Area: 301,435 square feet
- ✚ Scope of Work: Creation of BIM Models and BIM Coordination

The attached certificate is verifiable via the QR Code present in the certificate. For any further information on the student or the course, please feel free to contact the undersigned.

Thank you,

Roy Aniruddha  
Founder Director & Business Head  
TechnoStruct, LLC

## Service providers



TechnoStruct LLC is a licensed Design Engineering firm headquartered in California. TechnoStruct is a pioneer in Design & Construction technology, offering localized Engineering and BIM/VDC services, ensuring timely and budget-friendly projects. As a leading BIM global company, the VDC solutions drive better decisions and faster design interpretation.



**TechnoStruct Academy (TSA) is the education arm of TechnoStruct and is recognised as one of the leading institutes globally for Building Information Modelling (BIM) Education.**

TechnoStruct has been making inroads into some of the most prestigious projects globally, including Google Bayview project, Apple Headquarters, SFO International Airport Extension, Transbay Transit Center, New Stanford Hospital, Lucile Packard Children Hospital (LPCH), Ford Research, and Innovation Center, Kaiser Permanente Medical Buildings, to name a few.

## Our Notable Projects



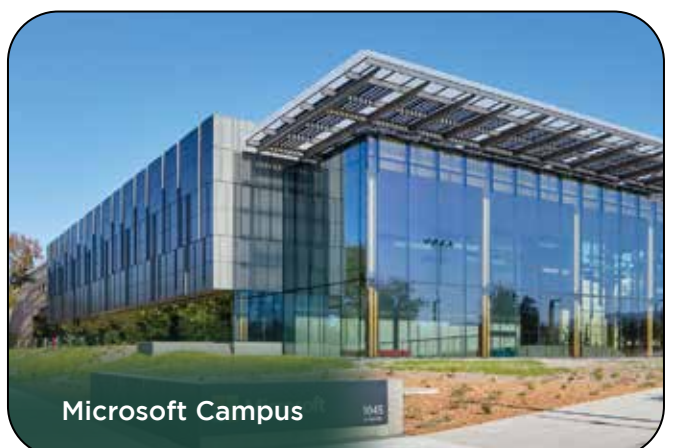
Apple Park



San Francisco International Airport



Meta Headquarters



Microsoft Campus

# Listen To What Our **Alumni** Have To Say



**Ermias Kefa**  
USA

I completed the BIM course at TechnoStruct Academy and had a great hands-on learning experience. The training is industry-focused, taught by experts, and gave me the confidence to use BIM on real projects. Highly recommended for architects looking to upskill.



**Stephen Terhorst,**  
Germany

Completing the BIM READY COMPLETE course at

TechnoStruct Academy was an enlightening experience, equipping me with invaluable skills in BIM. My internship at TechnoStruct further amplified my learning, providing hands-on exposure to real-world projects and nurturing my growth as a BIM professional.



**Marian Hakim,**  
Tunisia

The BIM-READY COMPLETE course at TechnoStruct Academy was fantastic! It gave me practical skills and my internship was really productive, preparing me well for the industry. I enjoyed my time here and I'm thankful for the experience.



**ABDULAH  
ADEMOLA OYELAMI**  
Nigeria

Hello everyone, I had a great learning experience with TechnoStruct Academy. The instructors are highly professional and explain BIM concepts very clearly. The support team is also very helpful. I would highly recommend TSA to anyone looking to start their BIM journey. Thank you.



**Jincy Varghese,** India

The MSU BIM Ready Complete 2.0 Course at TechnoStruct Academy was good. The course offers a perfect blend of theory and hands-on learning, including real-world projects that gave me practical insights into the BIM process.

The instructors were highly knowledgeable and supportive, making the learning experience engaging and enriching covering essential tools. I wholeheartedly recommend TechnoStruct Academy to anyone looking to expand their skill set, stay ahead of industry trends, and achieve their professional goals.

Elevate your Future in the AEC Industry with  
BIM-Ready® Complete by  
**MICHIGAN STATE  
UNIVERSITY**

**Enroll Now**

Contact- +1 209-330-9013/ +91-89107-20119

Or mail us at: [coordinator@technostruct.com](mailto:coordinator@technostruct.com)