

ASOCSA 8th Built Environment Conference



# Constructing the Future

## Possibilities, Probabilities & Opportunities

### Construction Intelligence & Digital Reality: An era of Perfect Design

Justin Taylor

28<sup>th</sup> July 2014



# Justin Taylor

## Personal Profile

An Autodesk Elite member, having worked with the design software solutions for over 25 years, with extensive industry experience across all disciplines within the AEC space, including real-world application and implementation of the full range of Autodesk design software solutions.

Having begun my working career as a drafting technician, I then then worked for various Autodesk resellers in both the UK as a trainer, application engineer, technical manager and consulting manager, before working directly for Autodesk as their UK AEC Application Engineer. Now I live permanently in South Africa, acting as the Business Development Manager for The CAD Corporation and VDCM.

Business Development Manager and Autodesk AEC Specialist for:

The CAD Corporation: [www.cadco.co.za](http://www.cadco.co.za)

Virtual Design and Construction Management: [www.vdcm.co.za](http://www.vdcm.co.za)

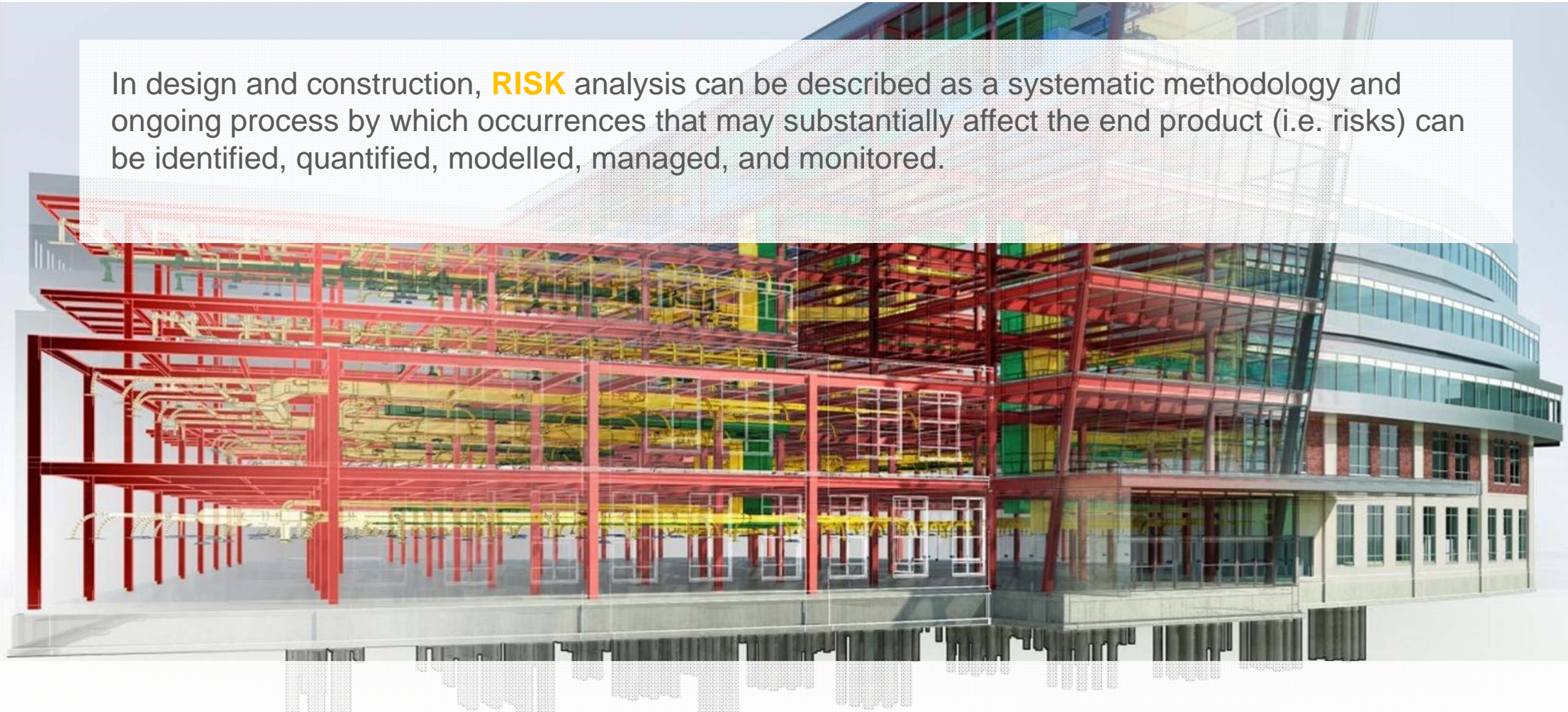
# Construction Management: Definition

**Construction management** or construction project management (CPM) is the overall **planning**, **coordination**, and **control** of a project from beginning to completion. CPM is aimed at meeting a client's requirement in order to produce a functionally and financially viable project.

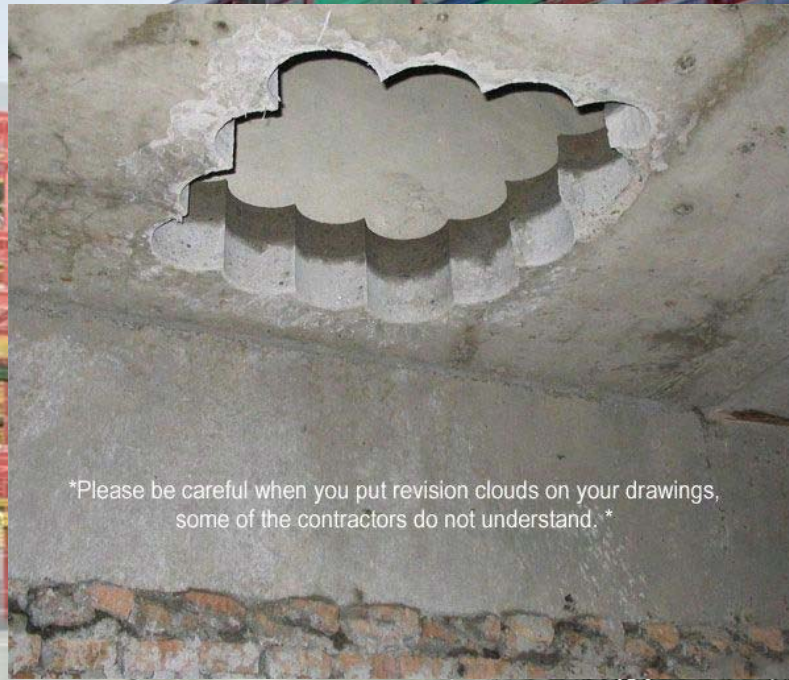


# Construction Management: RISK Management

In design and construction, **RISK** analysis can be described as a systematic methodology and ongoing process by which occurrences that may substantially affect the end product (i.e. risks) can be identified, quantified, modelled, managed, and monitored.



# Construction Management: RISK Management

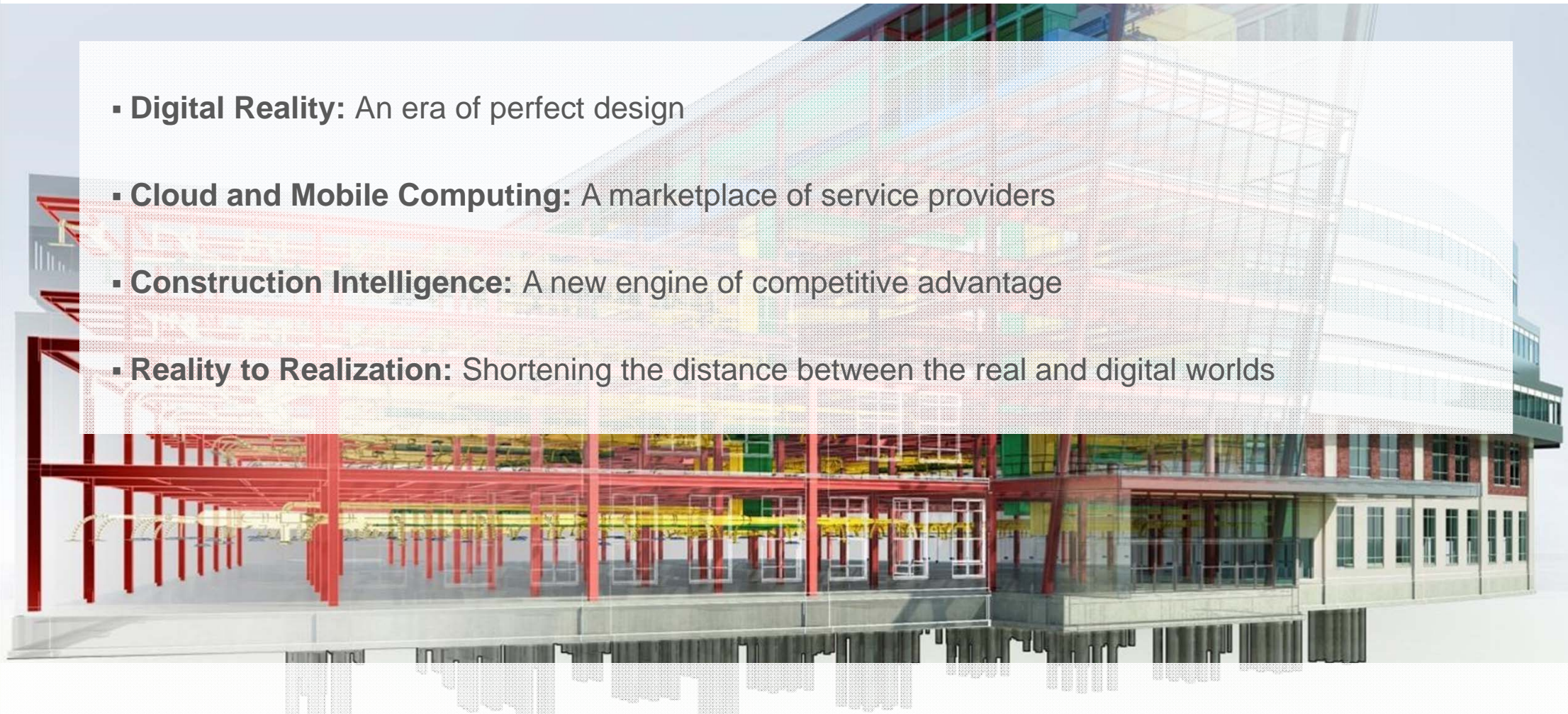


*\*Please be careful when you put revision clouds on your drawings, some of the contractors do not understand.\**



# Constructing the Future: Possibilities, Probabilities & Opportunities

- **Digital Reality:** An era of perfect design
- **Cloud and Mobile Computing:** A marketplace of service providers
- **Construction Intelligence:** A new engine of competitive advantage
- **Reality to Realization:** Shortening the distance between the real and digital worlds



# Autodesk Software Solution



# Business Development

## Possibilities, Probabilities & Opportunities

### Opportunity

Gain a competitive edge and demonstrate the capabilities of your business

### Benefits

- Visually communicate more clearly how work can be staged, coordinated, and executed
- Compete for larger, more complex projects using award-winning visualization tools
- Provide a digital as-built model for operations, maintenance, and future renovation





# Constructability Modelling

## Possibilities, Probabilities & Opportunities

### Opportunity

Contribute construction knowledge to the design process and streamline preconstruction coordination

### Benefits

- Gain insight early in the process
- Establish a platform for clash detection, construction analysis, and fabrication
- Support more sustainable and cost-effective construction practices



# Quantification

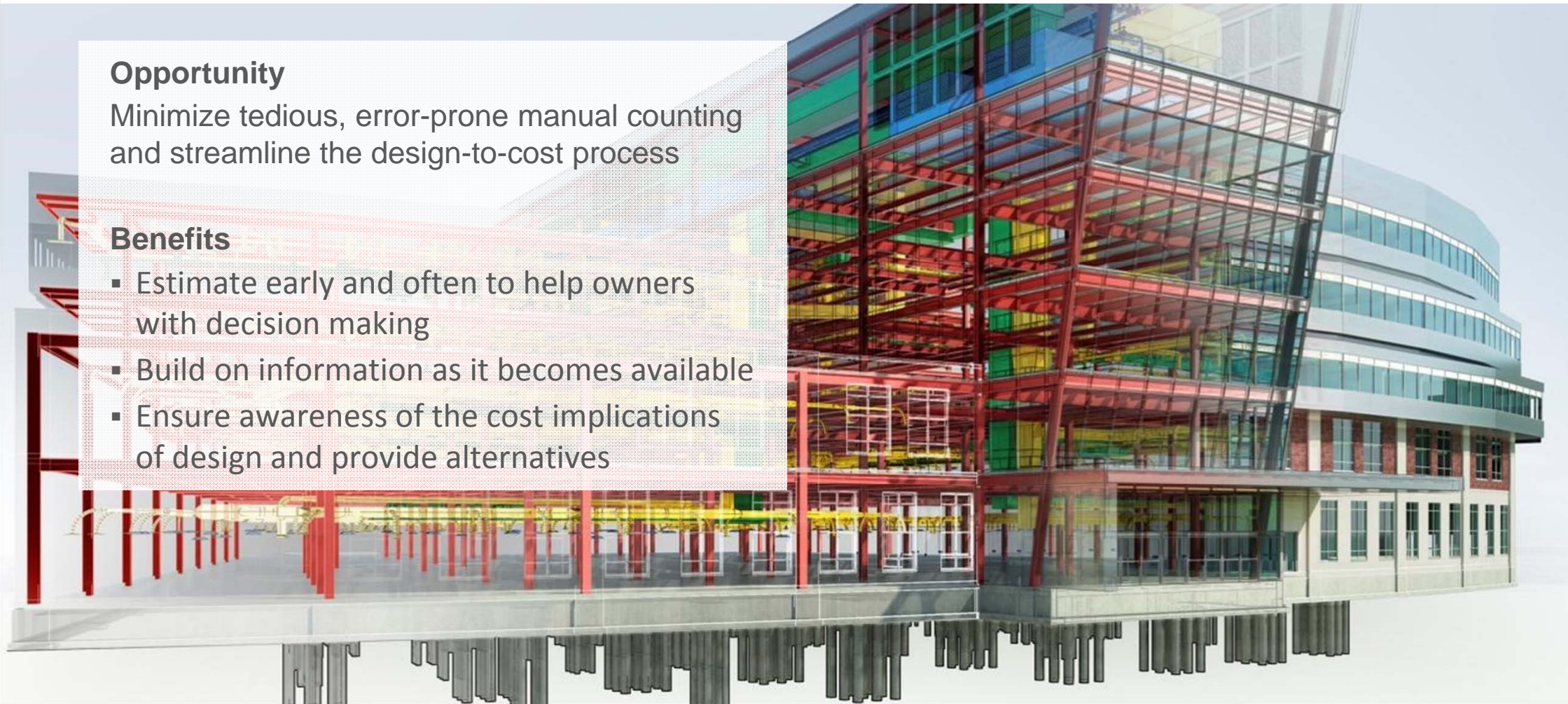
## Possibilities, Probabilities & Opportunities

### Opportunity

Minimize tedious, error-prone manual counting and streamline the design-to-cost process

### Benefits

- Estimate early and often to help owners with decision making
- Build on information as it becomes available
- Ensure awareness of the cost implications of design and provide alternatives



# Coordination - Desktop

## Possibilities, Probabilities & Opportunities

### Opportunity

Improve coordination and reduce costly change orders by better understanding the work of all trades before work begins in the field

### Benefits

- Provide a single, whole-project view
- Better coordinate site and work crew planning
- Improve project outcomes through fewer RFIs and field coordination problems



# Coordination - Cloud

## Possibilities, Probabilities & Opportunities

### Opportunity

Extend BIM collaboration and project review across the broader ecosystem

### Benefits

- One-click access to BIM project data—almost anytime, anywhere
- Real-time clash detection and coordination
- Shorter coordination review cycles
- Mobile access via iPad® mobile device
- Greater efficiency across the extended project team



# Planning & Logistics

## Possibilities, Probabilities & Opportunities

### Opportunity

Visualize schedule and logistics in 4D for more accurate construction sequencing and project understanding

### Benefits

- Enhance planning and trade coordination
- More quickly assess and quantify the impact of scope changes
- Explore tradeoffs when considering how to execute work
- More easily communicate project plan to stakeholders & project team



# Field Management

## Possibilities, Probabilities & Opportunities

### Opportunity

Transform the delivery and oversight of construction by combining cloud- based collaboration with mobile technologies at the point of construction

### Benefits

- Anywhere, anytime information access across the job site
- Higher issue, quality, and safety conformance through project execution
- Well-informed, happy owners who ask for repeat work



# Autodesk Navisworks Manage

Project review software for AEC professionals

**Here comes the live part**

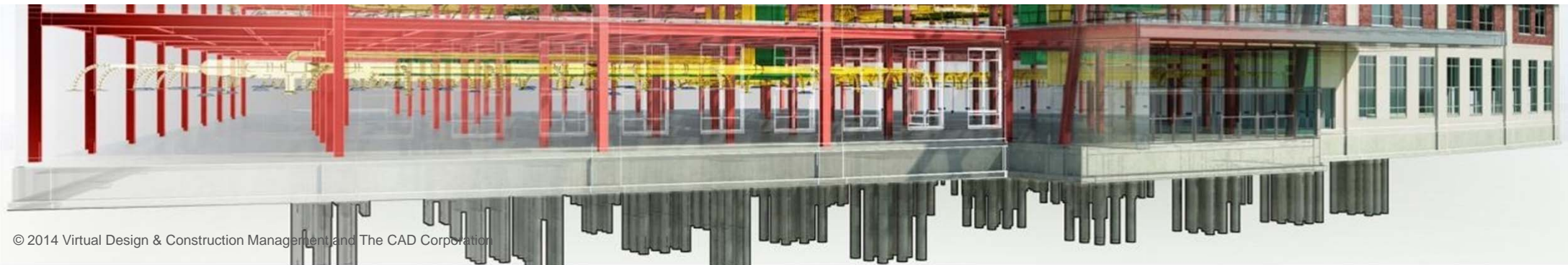


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# **Autodesk Education Post-Secondary**

**Educad – Autodesk Educational Partner for South Africa**





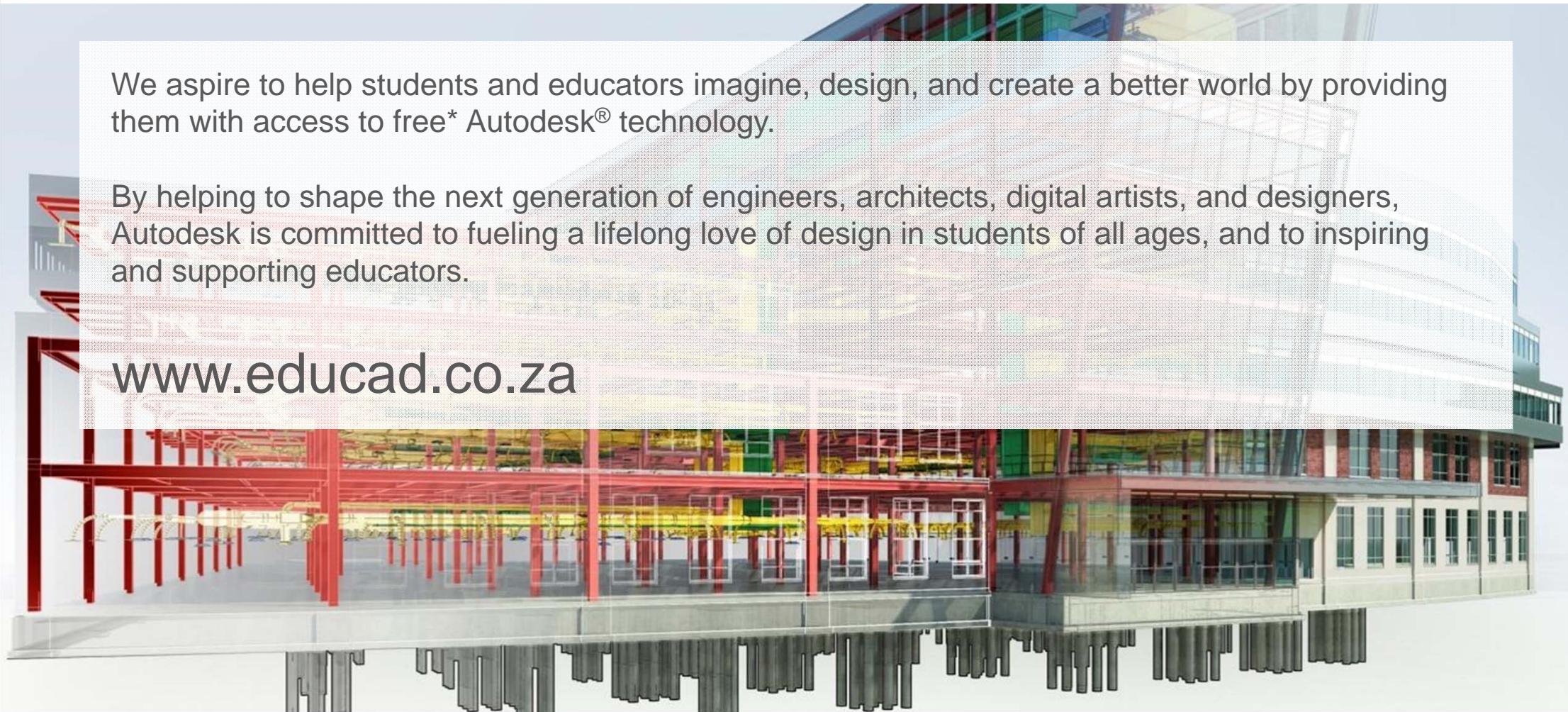
# Autodesk

## Educad: Autodesk Educational Partner for South Africa

We aspire to help students and educators imagine, design, and create a better world by providing them with access to free\* Autodesk® technology.

By helping to shape the next generation of engineers, architects, digital artists, and designers, Autodesk is committed to fueling a lifelong love of design in students of all ages, and to inspiring and supporting educators.

[www.educad.co.za](http://www.educad.co.za)



# Post-Secondary Programs

FREE\* to students and educators

Software and apps



Learning content and lessons



Training and certification



Student and educator programs



Ensure students are prepared and inspired to make a positive impact on the world, through great design

# Autodesk

## Helping Address Challenges in Education

### Challenges

- Industry needs workplace ready graduates
- Instruction needs to keep pace with learning styles
- Students are proactive in learning outside of the classroom

### Approach

- Reinforce the concepts to industry
- Enable learning through innovative technology
- Help students take a proactive role in their education

# Autodesk's Approach

## Helping Address Challenges in Education

- Workshops and tutorials build critical software skills
- Delivered the way students want: web, mobile & social
- Cloud delivers services and computing power to all
- Campus and online resources



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# Software for Students

<http://www.autodesk.com/edcommunity>

- Download from Education Community
- 35+ title available for FREE
- 3 year license
- 10,000,000+ member
- Gallery showcase
- Learning materials



# Software for Institutions

## Autodesk Academic Resource Center (ARC)

- Latest version and 3 versions back (2015, 2014, 2013 & 2012)
- 3 year term license
- Networks and multi-seat stand-alone deployments
- 125 seats per serial number to a maximum seat number per account of 1,250



**EDUCAD: [www.educad.co.za](http://www.educad.co.za)**

Autodesk's Educational Partner for South Africa

**Thank you for your attention**

