



PROJACS ACADEMY
by egis



Risk Factors Leading to Cost Overrun and Applying Lean Construction Paradigm

أسباب تجاوز التكلفة والتأخير في تنفيذ المشاريع وتطبيقات
النمذجة السريعة

15 – 19 May 2023

Istanbul / Turkey

Introduction

Proper Cost estimating and budgeting is key for successful management of construction delivery. However, most of construction projects -including international landmark projects- suffer from cost overruns. This course will investigate the risk factors leading to this cost overrun. It will investigate different categories of risks associated with the construction industry and its business environment. The course will also cover the tools and techniques used for risk assessment and determination of risk response techniques.

Objectives

At the end of the course the attendees should be able to:

- Understand the major risk factors in the construction industry
- Differentiate between the different systems and international standards covering risk management in general (ISO, PMI-RPM, DRMP, BS, etc)
- Understand the risk management definitions, processes and domains
- Understand the tool and techniques needed to manage different aspects of construction risks
- Learn how to plan and implement risk response in the construction industry
- Apply risk management processes, tools and techniques on real-life seniors
- Learn how to use risk management software in risk cost simulations

Who Should Attend?

This course is targeted for managers and engineers involved in analysis and decision making concerning cost estimating, budgeting of projects, bid preparation, bid analysis, project planning, project controls, construction management and construction delivery.

Course Outline

Day One:

The construction industry - An overview

- Construction project phases from inception to closure
- Project Phases and cost estimating classes
- Risk categories of major risks in the construction industry

Planning for risk management

- Reviewing the scope of work
- Defining data sources (construction documents, specifications, drawings, etc)
- Identifying relevant policies and standards to risk management
- Establish metrics for risk management processes by defining baselines in order to evaluate performance.
- Defining risk tolerances and attitude of the stakeholders
- Assigning roles and responsibilities to the risk management team
- Define risk probability and impact matrix and control limits
- Create the risk management plan

Work Shop I: Risk management plan for a construction project

Day Two:

Gathering Information and Identifying Risk Factors causing cost overruns

- Identify all relevant risks (positive and negative) using human and documented sources
- Information gathering techniques
- SWOT Analysis
- Identifying design risks
- Identifying construction risks
- Identifying Financial and Economic risks
- Identifying organizational / Internal risks
- Identifying customer related risks
- Identifying regulatory risks
- Identifying contractor / supplier risks
- Identifying planning and estimating risks
- Identifying delays / prolongation risks
- Identifying health, safety and environmental (HSE) risks

Day Three:

Risk Assessment and Analysis

- Assessing probability and impact of risks using historical information and expert judgment
- Evaluating and ranking risks using probability / impact matrix
- Quantitative risk analysis using decision tree analysis
- Quantitative risk analysis using Monte - Carlo analysis
- Sensitivity analysis
- Fault tree analysis
- FMEA (Failure Mode & Effect Analysis)

Work Shop II: Risk register with qualitative data

Day Four:

Work Shop III: Cost -Risk analysis case-study using Pertmaster (Primavera Project Risk)

Risk Response Planning

- Risk response strategies for negative and positive risks
- Responding to design risks and construction
- Responding to Financial and Economic risks
- Responding to organizational / Internal risks
- Responding to customer related risks
- Responding to regulatory risks
- Responding to contractor / supplier risks
- Responding to project management risks

Day Five:

Work Shop IV: Updating the Risk register with appropriate responses

Risk Monitoring and Controlling

- Implementing risk response plans
- Following-up risks during construction
- Risk reassessment and re-evaluation
- Workarounds
- Risk auditing
- Documenting lessons learned
- Updating relevant risk databases

Training Method

- Pre-assessment
- Live group instruction
- Use of real-world examples, case studies and exercises
- Interactive participation and discussion
- Power point presentation, LCD and flip chart
- Group activities and tests
- Each participant receives a binder containing a copy of the presentation. slides and handouts.
- Post-assessment

Program Support

This program is supported by interactive discussions, role-play, case studies and highlight the techniques available to the participants.

Schedule

The course agenda will be as follows:

- | | |
|---------------------|------------------|
| • Technical Session | 08.30-10.00 am |
| • Coffee Break | 10.00-10.15 am |
| • Technical Session | 10.15-12.15 noon |
| • Coffee Break | 12.15-12.45 pm |
| • Technical Session | 12.45-02.30 pm |
| • Course Ends | 02.30 pm |

Course Fees*

- **3,200 USD**
**VAT is Excluded If Applicable*

المقدمة

يعد تقدير التكلفة المناسبة ووضع الميزانية أمرًا أساسيًا للإدارة الناجحة لتسليم البناء. ومع ذلك، فإن معظم مشاريع البناء - بما في ذلك المشاريع الدولية البارزة - تعاني من تجاوز التكاليف. ستبحث هذه الدورة في عوامل الخطر التي تؤدي إلى تجاوز التكلفة. وسيحقق في فئات مختلفة من المخاطر المرتبطة بصناعة البناء وبيئة الأعمال فيها. ستغطي الدورة أيضًا الأدوات والتقنيات المستخدمة لتقييم المخاطر وتحديد تقنيات الاستجابة للمخاطر.

الإهداف

في نهاية الدورة يجب أن يكون الحاضرون قادرين على:

- فهم عوامل الخطر الرئيسية في صناعة البناء
- التفريق بين الأنظمة المختلفة والمعايير الدولية التي تغطي إدارة المخاطر بشكل عام (ISO ، PMI- ، RPM ، DRMP ، BS ، إلخ)
- فهم تعاريف إدارة المخاطر والعمليات والمجالات
- فهم الأداة والتقنيات اللازمة لإدارة الجوانب المختلفة لمخاطر البناء
- تعلم كيفية تخطيط وتنفيذ الاستجابة للمخاطر في صناعة البناء والتشييد
- تطبيق عمليات وأدوات وتقنيات إدارة المخاطر على كبار السن في الحياة الواقعية
- تعلم كيفية استخدام برامج إدارة المخاطر في محاكاة تكلفة المخاطر

الحضور

تستهدف هذه الدورة المديرين والمهندسين المشاركين في التحليل واتخاذ القرار فيما يتعلق بتقدير التكلفة، ووضع الميزانية للمشاريع، وإعداد العطاءات، وتحليل العطاءات، وتخطيط المشروع، وضوابط المشروع، وإدارة البناء، وتسليم البناء.