

Mastering Delay Analysis in Construction Contracts Training Course (2 Weeks)

AGILE LEADERS
Training Center

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Overview

Delays in capital projects cause severe commercial friction, liquidated damages disputes, and budget overruns. Mastering delay analysis in construction contracts enables project teams and legal counsel to assess schedule disruptions objectively and substantiate entitlement. Over fourteen intensive days, this programme investigates schedule networks, contractual risk mechanisms, forensic modeling methodologies, and claim substantiation standards. Participants examine critical path deviations, concurrency arguments, productivity loss calculations, and dispute avoidance frameworks using contemporaneous project records. This course is delivered by Agile Leaders Training Center.

Who Should Attend

- Project managers and construction directors supervising complex infrastructure works.
- Contract administrators and commercial managers handling claims and dispute resolution.
- Delay analysts, planning engineers, and forensic schedulers developing time models.
- Quantity surveyors, cost consultants, and project controls specialists.
- Construction lawyers, in-house counsel, and dispute board members evaluating delay claims.

Departments and Industries

This programme serves professionals across major contracting, civil infrastructure, and heavy engineering sectors.

- Project Management and Planning Divisions in Infrastructure Development
- Contract Administration and Commercial Teams in EPC Contracting
- Legal and Claims Advisory Units in Construction Law Practices
- Project Controls and Engineering Groups in Energy and Industrial Facilities
- Public Works and Transport Infrastructure Authorities

Learning Objectives

By the end of this course, participants will be able to:

- Classify project delay events as excusable, compensable, non-excusable, or concurrent under standard contract terms.
- Apply forensic delay methodologies including as-planned vs as-built, impacted as-planned, collapsed as-built, and time impact analysis.
- Evaluate project critical paths and total float allocation to establish causal links between delay events and completion dates.
- Implement the principles of the SCL Delay and Disruption Protocol across live projects and dispute proceedings.
- Quantify disruption and lost productivity using the measured mile approach and earned value metrics.
- Formulate defensible delay claim narratives supported by contemporaneous records and schedule software demonstrations.
- Design proactive delay mitigation, acceleration, and schedule recovery plans to prevent project slippage.

Course Agenda

Day 1: Foundations of Delay Analysis and Contractual Context

- Root causes of schedule delay across complex infrastructure works
- Contractual risk allocation and delay provisions under FIDIC and NEC contract forms
- The distinction between critical path delays, progress slippage, and disruption
- Procedural notice requirements and condition precedent clauses
- Legal principles governing causation and contractor delay remedies
- Review of delay dispute case law and dispute board rulings

Day 2: Types and Classifications of Delays

- Categorisation of excusable, non-compensable, and compensable delays
- Identifying contractor default versus employer risk events
- Principles governing concurrent delay in construction contracts
- Contractual entitlement mechanisms for extension of time applications
- Allocation of schedule float and pacing delay considerations
- Comparative jurisdictional treatment of contractor entitlement

Day 3: Delay Claim Life Cycle and Claim Preparation

- Phases of a construction delay dispute from notice to final settlement
- Assembling contemporaneous project records and daily logs
- Establishing causation links between event records and schedule updates
- Substantiating direct time-related overhead and prolongation costs
- Evidentiary thresholds expected by arbitral tribunals and courts
- Step-by-step case review of claim packaging and defence

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Day 4: Programming and Project Scheduling Techniques

- Developing robust baseline construction schedules using the critical path method
- Work breakdown structures and logic linking integrity
- Determining activity durations, calendars, and dependency constraints
- Forward and backward pass schedule calculation mechanics
- Software schedule integrity verification using MS Project and industry tools
- Maintenance and version control of periodic progress updates

Day 5: Baseline Validation and Programme Integrity

- Auditing initial baselines for logical errors, open ends, and artificial constraints
- Management of total float, free float, and project float ownership rules
- Incorporation of contractual milestones and key completion dates
- Resource loading, productivity baselines, and resource leveling impacts
- Formal acceptance protocols for baseline approval by project engineers
- Addressing common baseline distortions and manipulation tactics

Day 6: Recording and Monitoring Delays

- Establishing contemporaneous progress tracking and site record procedures
- Documenting employer impediments, variation orders, and late approvals
- Protocol for issuing compliant delay notices within contract time bars
- Standardised tools and register templates for tracking delay events
- Managing information requests, site instructions, and submittal logs
- Common errors in site documentation that undermine delay claims

Day 7: As-Planned vs As-Built Analysis

- Core concepts and procedural steps of as-planned vs as-built analysis
- Reconstructing as-built schedules from daily reports, invoices, and minutes
- Identifying critical path shifts and activity variance intervals
- Evaluating static retrospective methodologies and their limitations
- Application exercise using project data to calculate net delay
- Verification procedures for ensuring as-built data accuracy

Day 8: Impacted As-Planned and Collapsed As-Built Methods

- Theoretical foundation of additive impacted as-planned modeling
- Execution and analytical steps of subtractive collapsed as-built analysis
- Simulating employer risk events against contemporaneous logic networks
- Practical execution of time impact analysis on sequential schedule updates
- Criteria for choosing the most defensible method for a given project scenario
- Limitations, vulnerabilities, and counter-arguments for each technique

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Day 9: Concurrency and Critical Path Evaluation

- Detailed mechanics of concurrent delay in construction disputes
- Distinguishing true concurrent delay from sequential pacing delays
- Dominant cause test versus apportionment under common contract forms
- Dynamic critical path behavior across successive schedule update periods
- Quantifying float erosion caused by non-critical delay events
- Drafting expert conclusions regarding concurrent employer and contractor delays

Day 10: Application of the SCL Delay and Disruption Protocol

- Core objectives and core guidance of the SCL Delay and Disruption Protocol
- Prospective analysis versus retrospective delay assessment rules
- Handling delay notices, float ownership, and concurrent delays under SCL rules
- Integrating SCL guidance into contract drafting and commercial administration
- Evidentiary standards for extension of time determinations
- Practical case scenarios evaluating SCL guidance against project realities

Day 11: Quantification of Delays and Disruptions

- Calculating prolongation costs, site overheads, and head office overhead
- Distinguishing delay claims from loss of productivity and disruption
- Applying the measured mile method to establish disruption baselines
- Cost allocation formulas and forensic accounting checks for claim amounts
- Visual presentation of disruption impacts using graphical schedules
- Case study on establishing causal linkage for labour inefficiency

Day 12: Delay Mitigation and Acceleration

- Contractual obligations regarding delay mitigation and reasonable steps
- Designing constructive versus directed acceleration programmes
- Evaluating acceleration costs, overtime premiums, and resource crowding
- Schedule logic alterations to achieve targeted completion recovery
- Contractor compensation rights during unapproved acceleration
- Case review of successful recovery schedules on highway projects

Day 13: Delay Claim Reporting and Legal Defense

- Structuring detailed delay expert reports and claim submissions
- Presenting forensic schedule analysis to dispute adjudication boards
- Visual communication of complex delay networks to non-technical panels
- Identifying report deficiencies that lead to claim rejection
- Drafting executive summaries, narrative chronologies, and appendices
- Standards of independence and credibility required of delay experts

Day 14: Capstone Integration and Portfolio Review

- Consolidating multiple delay modeling techniques within a unified case
- Group workshop: Evaluating an infrastructure delay and preparing findings
- Presenting claim arguments and defending methodology selection
- Peer review and critique of participant delay evaluations
- Professional ethics and standard operating practices in delay analysis
- Course synthesis and personal implementation roadmap

Practical Exercises

Participants complete hands-on activities to resolve contractual and scheduling challenges.

- Perform an audit of a construction baseline schedule to identify logic defects and artificial float constraints.
- Execute an as-planned vs as-built comparison to isolate critical path variance on a project dataset.
- Implement a time impact analysis using MS Project to evaluate the schedule effect of employer variation notices.
- Draft an extension of time narrative addressing concurrency arguments under SCL Protocol recommendations.

FAQs

What specific qualifications are needed before enrolling?

A background in construction management, engineering, quantity surveying, or contract law is recommended. Familiarity with project scheduling concepts or claims management will assist participants in completing the analytical exercises.

How long is each day's session and total duration?

Each session runs for four to five hours, encompassing theoretical instruction, workshops, and case analysis. The full course spans fourteen working days, delivering sixty to seventy hours of guided training.

Does the course include practical software demonstrations?

Yes. The training features practical demonstrations using MS Project and schedule modeling techniques to analyze critical paths, perform time impact assessments, and generate delay documentation.

Conclusion

This fourteen-day programme prepares project professionals to handle complex time disputes with analytical rigour and contractual confidence. By examining forensic scheduling methods, SCL Protocol standards, and practical delay quantification techniques, participants gain the tools necessary to protect project outcomes, resolve delay claims, and defend contractual positions effectively.

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