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Building Success:
Managing Project Risk Through Effective Work Planning

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Areas of Expertise & Advocacy:

- Heavy/Highway
- Specialty Trades
- Mining (Surface)
- General Industry/Manufacturing
- Critical Incident Response
- Worker Wellbeing & Suicide Prevention

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Today's Learning Objectives

- Understand why detailed planning is critical in managing risk on construction projects
- Discuss the relationship between productivity, quality, safety, and how they affect profitability
- Identify potential risks and develop robust project plans
- Establish clear and consistent communication strategies at all levels
- Identify best practices for effective daily work and task planning

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What are your goals for each project?

- ☑ Exceeds expectations
- ☑ On schedule
- ☑ Within budget
- ☑ Zero injuries/damages
- ☑ No rework
- ☑ No litigation
- ☑ Protect the public
- ☑ Minimize impact on neighbors
- ☑ Create atmosphere for doing your best work
- ☑ Preserve positive reputation
- ☑ Create opportunities to win more work

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Why are goals not being met?

- This is most likely a product of
  - unclear specifications
  - risks not adequately anticipated or managed
  - lack of planning and coordination
  - poor communication
- Each party to the construction process has expectations – and many of them are assumed
- A mismatch between these expectations can result in:
  - Confusion and misunderstanding
  - Decreased productivity
  - Higher likelihood of errors, incidents, and delays
  - Lack of trust and strained project relationships
  - Profit fade and schedule delays

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Why Detailed Planning is Critical

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Construction Work is Risky Business

- Risks to your business
  - Operational
  - Legal
  - Financial
  - Reputational
- Risk management methods
  - Avoid
  - Retain (and Reduce)
  - Transfer

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Key Statistics Related to Project Planning

- Low margins
  - Average net profit margin in construction is 3-7% (IBISWorld Industry Reports)
- Cost overruns
  - According to McKinsey's Construction Productivity Imperative Report, almost all commercial contractors reported that their projects experienced cost overruns
  - A three-year study by KPMG found that only one third of building contractors' projects came within 10% of the original budget
- Project delays
  - Only half of construction owners say their projects are completing on time
  - Only 25% of construction projects are completed within 10% of their original deadlines
- Workplace accidents
  - Studies by numerous safety agencies and organizations cite that inadequate planning may contribute to 20-40% of workplace accidents

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Challenges Affecting Project Delivery

Accelerated Schedules	Delayed starts Scope creep Occupy space early
Labor Shortages	Industry growth Aging workforce, retirements Difficulty attracting new workers
Supply Chain Issues	Weather World events

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Planning for Profit

- Thorough planning is required regardless of the size of task or project
- Implement a process for each stage
  - Pre-bid
  - Pre-construction
  - Pre-mobilization
  - Pre-phase
  - Pre-task
- Identify your targeted profit
- Create a workable plan and schedule
- Identify and control risk

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Relationship Between Productivity, Quality, and Safety

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Defining Profit Fade

- When the profit from a job is less than anticipated – usually due to increased costs

Largest Field Contributors To Profit Fade		
Productivity	Quality	Safety & Risk
• Site conditions • Workflow • Labor • Tools and equipment • Communication	• Design • Materials • Inspections • Workmanship • Rework	• Recognition • Prevention • Incidents • Investigation • Downtime

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Relationship Between Productivity-Quality-Safety

- These areas often compete creating potential for deficiencies, losses, and reduced profits
- These deficiencies are often due to inadequacies in the management system
- When planned for and given equal priority, successful outcomes are more likely

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A Focus on Productivity

- Roughly 1/3 of all field labor is lost due to inadequate training, task instruction, understanding of the quality standards, and a system to observe and measure them
- Factors affecting productivity are labor characteristics, working conditions, and non-productive work activities
- The more productive employees are, there is less idle time, waste, and cutting corners on quality and safety

Key Considerations

- Sequencing, layout, and coordination of work
- Quantities, rates of production, quality standards, and project benchmarks
- Scheduling is more accurate when based off individual tasks
- Equipment and tool selection for optimal productivity
- Crew formation, training, and coaching
- Balance supervisor's authority with crew's input

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A Focus on Quality

- The degree to which a product, service or performance fulfills a specific, defined set of expectations
- With higher quality work, less re-work is needed, the safety risks are reduced, and overall productivity improves
- How are you managing quality?
  - What is your QA/QC process?
  - How do you ensure that materials meet specifications and are free from defects prior to use?
  - How are workers made aware of the quality requirements for their project-specific tasks?
  - How often are quality measures verified?
  - How are critical hold points documented?
  - How is rework tracked and investigated?

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The Impact of Quality on Incidents

- Poor quality typically results in rework
- Rework is often a factor in incidents
  - estimated to be 4-9% of project costs
  - means workers triple their exposure to safety hazards
  - usually done much faster to get back on schedule *and* to make sure nobody finds out about the mistake

Rework = Risk X 3

X Initial installation
X Demolition/removals
X Reinstallation

Even *less* planning goes into redoing what wasn't adequately planned for in the first place

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A Focus on Safety & Risk

- The risks cannot be fully understood and controlled unless task is clearly defined
- When the risks are understood and well managed, there is less disruption due to incidents – and productivity and quality improve
- Workers cannot be productive and maintain quality standards in an unsafe environment

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Identifying Potential Risks and Developing Project Safety Plans

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Pre-Bid Considerations

- Identify who to involve and when
- Review insurance, prequalification, client requirements
- Search for key words/phrases on project bid documents
- Obtain historical data on similar projects completed
- Assess pre-existing conditions
- Formalize your subcontractor selection process
- Enhance communication through Requests for Information (RFIs) during the bidding process and construction

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Subcontractor Selection and Management

- What is your rationale for subcontracting?
- Develop a selection/prequalification process for evaluating a subcontractor's management of safety and financial risk
- Transfer risk through project specific contracts
- Involve subcontractors in safety planning and process
- Establish an inspection routine to track and evaluate overall performance

Subcontractor Considerations

- ☑ Ownership and management structure
- ☑ Qualifications of key personnel
- ☑ Project experience
- ☑ Financial history
- ☑ Surety and bonding issues
- ☑ Verification of insurance
- ☑ Staffing capabilities
- ☑ Litigation
- ☑ Experience Modification Rate (EMR)
- ☑ OSHA citations and incident rates
- ☑ Safety programs
- ☑ Orientation and training
- ☑ QA/QC management
- ☑ References

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Building Safety Into the Contract

- At minimum, ensure compliance with federal, state and local regulations
- Site specific safety rules can be added to the contract as an exhibit
- Require a written safety plan
- Identify specific areas of the project site that are subject to subcontractor's control and oversight
- Include language that places the responsibility on the subcontractor to maintain safety for their own work

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Project Risk Assessment and Control

- Identify exposures that require non-traditional controls
- Design protection into the job
- Require job-specific safety plans
- Conduct task analysis and daily work planning exercises
- Perform regular inspections
- Investigate all incidents

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Factors Influencing Project Safety Planning

- Each construction project is unique due to a variety of factors that can significantly impact planning, execution, and safety such as
  - Location
  - Site conditions
  - Project scope and complexity
  - Resource availability
  - Community impact
  - Owner and GC requirements

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Elements of Project Safety Planning

- Establish safety rules and expectations – including stop work authority
- Define roles and responsibilities between GC and subcontractors
- Require site-specific safety plans and review process for high-risk work
- Establish a routine for communicating safety expectations through project orientation, periodic training, and toolbox talks
- Conduct regular progress meetings
- Create an environment for continuous improvement

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Site-Specific Safety Plan Considerations

- Accountability Plan
- Audits/Inspections
- Cell Phone Usage
- Confined Space Entry
- Crane Safety and Rigging
- Temporary Electrical
- Emergency Response/ Crisis Management Plan
- Hazard Communication
- Heavy Equipment Safety
- Fall Protection
- Fire Prevention and Protection
- Housekeeping
- Daily Work Planning
- Hot Work Permit
- Personal Protective Equipment (PPE)
- Protection of the Public/Visitors
- Recordkeeping and Incident Reporting
- Rooftop Access
- Smoking
- Substance Misuse Policy
- Temporary Elevators
- Utility Damage Prevention
- Excavations
- Concrete & Masonry
- Ladders & Scaffolds
- Water Intrusion
- Wind
- Theft Prevention
- Incident Investigation

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Communication Strategies

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Effects of Poor Communication

- Failing to provide workers adequate information for completing a task leads to:
  - Uncertainty
  - Poor decision-making
  - Inefficiency
  - Errors
  - Quality issues
  - Delays
  - Accidents
  - Employee turnover
  - Profit fade

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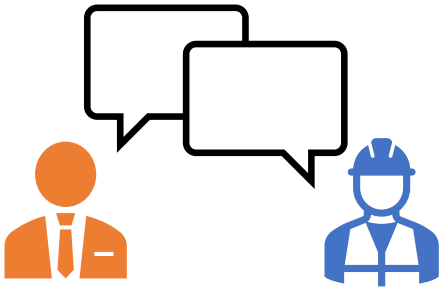
Positive Communication Practices

- Provide context for task to be completed (big picture)
- Be specific – include quantities, timelines, quality and safety standards
- Choose a respectful tone
- Allow the team to contribute and verify understanding
- Show appreciation
- Offer constructive feedback when expectations aren't being met
- Put the team in positions to make good decisions without you
- You may have to adjust your style when communicating with individuals
- Lead by example



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How Workplace Culture Influences Communication

A strong workplace culture allows workers to be at their best allowing for greater engagement, problem-solving, conflict resolution, and innovation

Leaders should strive to create an environment where workers

- feel comfortable asking questions about things they don't understand or don't know
- feel comfortable asking other workers for help when they need it
- feel they can respectfully disagree with work plans and offer other ideas
- can admit mistakes without fear of punishment in the name of continuous improvement
- are invited to contribute regardless of their role or length of employment

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Safety Communication Opportunities

- Pre-construction meetings
- Owner/Architect/Contractor meetings
- Project start-up meetings
- Subcontractor progress meetings
- Weekly field coordination meetings
- Internal team meetings
- Project safety meetings/toolbox talks
- Safety stand-downs
- Daily work/task planning meetings

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Daily Work Planning

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Key Duties of a Supervisor

- Understands processes involved in achieving project goals
- Coordinates and supervises daily activities
- Sequences project installations to minimize conflicts with other project activities and the public
- Monitors execution of tasks, material and equipment needs, worker performance, quality measures, and safety concerns
- Maintains safe working conditions and enforces safe work practices
- Selects optimal equipment and tools for completing project tasks and ensures their proper operation and maintenance
- Analyzes job cost reports to ensure project is within budget
- Maintains professional relationship with Owner

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The Impact of Communication on Decision-Making

- Under-communication breeds uncertainty, creates stress, reduces efficiency, and can lead to poor decision making
- How can workers complete tasks if they are not sure what they are, or even the goal they are working towards?
- Will waste time wondering what they are supposed to be doing and hesitate to invest too heavily in any one task
- Results in low productivity, missed deadlines, and incomplete tasks, turnover
- Lack of information causes uncertainty, so we go back to what we know and is comfortable
- Good decisions are made when others are included in the process

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Daily Work Planning Overview

- Process for communicating expectations for achieving project goals related to production, quality, and safety
- Requires a small investment in time and effort to avoid inefficiencies, errors, damages, and injuries
- Starts with being able to clearly explain the who, what, where, when, how, and why
- Daily work planning meetings and engagement throughout the day also allow us to assess worker readiness
- Anticipate that conditions will change – make sure you pause to adjust your plan

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Rationale for Daily Work Planning

- Every aspect of construction requires planning
  - The degree of planning determines the likelihood of success
- Construction work is dangerous, and tasks should never be minimized
  - "I'm just (fill in the blank)"
- Workers can't read your mind to know WHAT you want done and HOW you want them to do it
  - Each task, each day, and each person's understanding is different
- Explaining WHY helps everyone see the bigger picture
- Opportunity to gauge worker readiness

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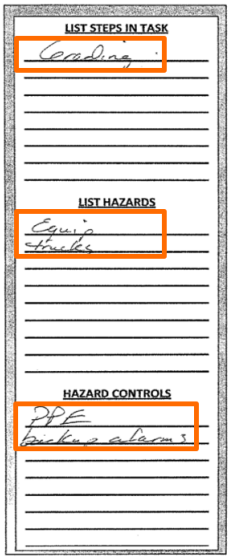
Communicating the Plan

- If you can't explain a task, you don't understand it well enough – and neither will your crew
- Explanations should be simple, but have enough details to provide clarity
- When instructions are too general, productivity decreases, the risks are understated, and errors are likely
- If your crew is left to figure things out on their own, how confident are you that they will do it the way you want them to?



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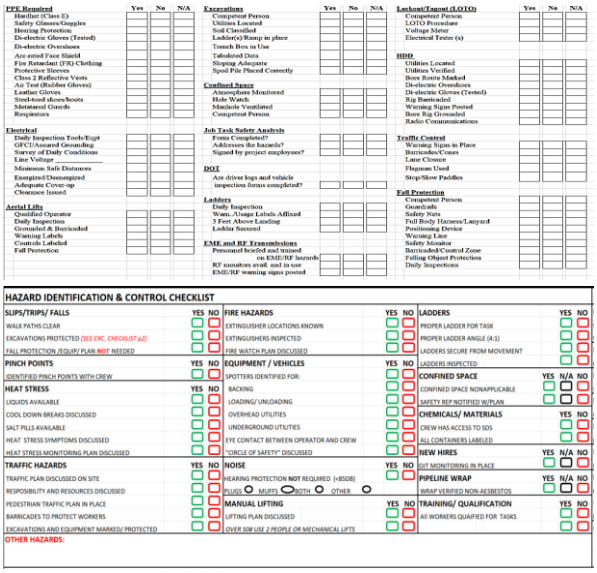
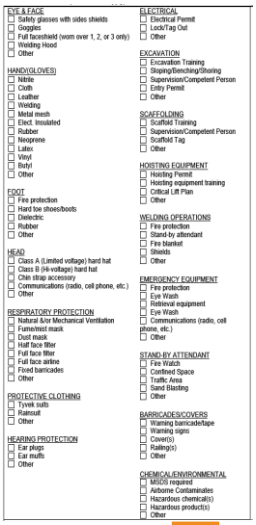
Are You Planning or Checking a Box?





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Daily Work Planning

Today's Date: _____ **Crew size:** _____

Is today's Work Activity – REWORK/REPAIR/REPLACE? ☐ YES ☐ NO

Did You Meet YESTERDAY'S PRODUCTION GOALS ☐ YES ☐ NO

If no – Explain Reasons WHY:

Is Activity on Schedule as Planned? ☐ YES ☐ NO

Number of Days Behind: Project Completion Date:

Today's PRODUCTION GOALS –Details, Location, Quantity, Time, etc.

1.

2.

3.

4.

5.

QUALITY CONTROL for today's work:
Necessary Controls, Specifications, Instructions, Inspections

EQUIPMENT Needed

TOOLS Needed

Today's Work Includes the Following HIGH HAZARD ACTIVITIES:

Field Crew WORK ACTIVITY HAZARDS Include:

Identify All SAFETY & NECESSARY PRECAUTIONS to Protect Workers

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Evaluation of Task Execution

- We often assume the plan will work – have the discipline to know when it isn't (expected vs actual)
- As the task is being performed, reassess the initial assumptions – were they accurate?
- Stand down for any significant change in initial assumptions or conditions
- Alter the plan if it isn't working as intended

Post-Task Review

- ☑ Did any incidents occur?
- ☑ Were there any delays?
- ☑ Were there errors or quality issues?
- ☑ How will we do it differently next time?
- ☑ How do we communicate our findings to help others?

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Conducting Project Debriefs

- Process for evaluating actual vs intended (planned)
- Supports a continuous growth/improvement mindset
- Should be performed following each major milestone and at project completion
  - Was each milestone completed as originally expected?
  - What went well/didn't go well? Why?
  - What improvements are needed?

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Closing Thoughts

Plan for each day, each task	Provide details on who, what, where, when, how, and why.
Lead by example	Guide others through what you do and what you say.
Account for performance	Set expectations and correct unwanted behaviors, conditions, and methods.
Never stop communicating	Does each worker know what to do and why? Are they on task?

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Thank You.

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