

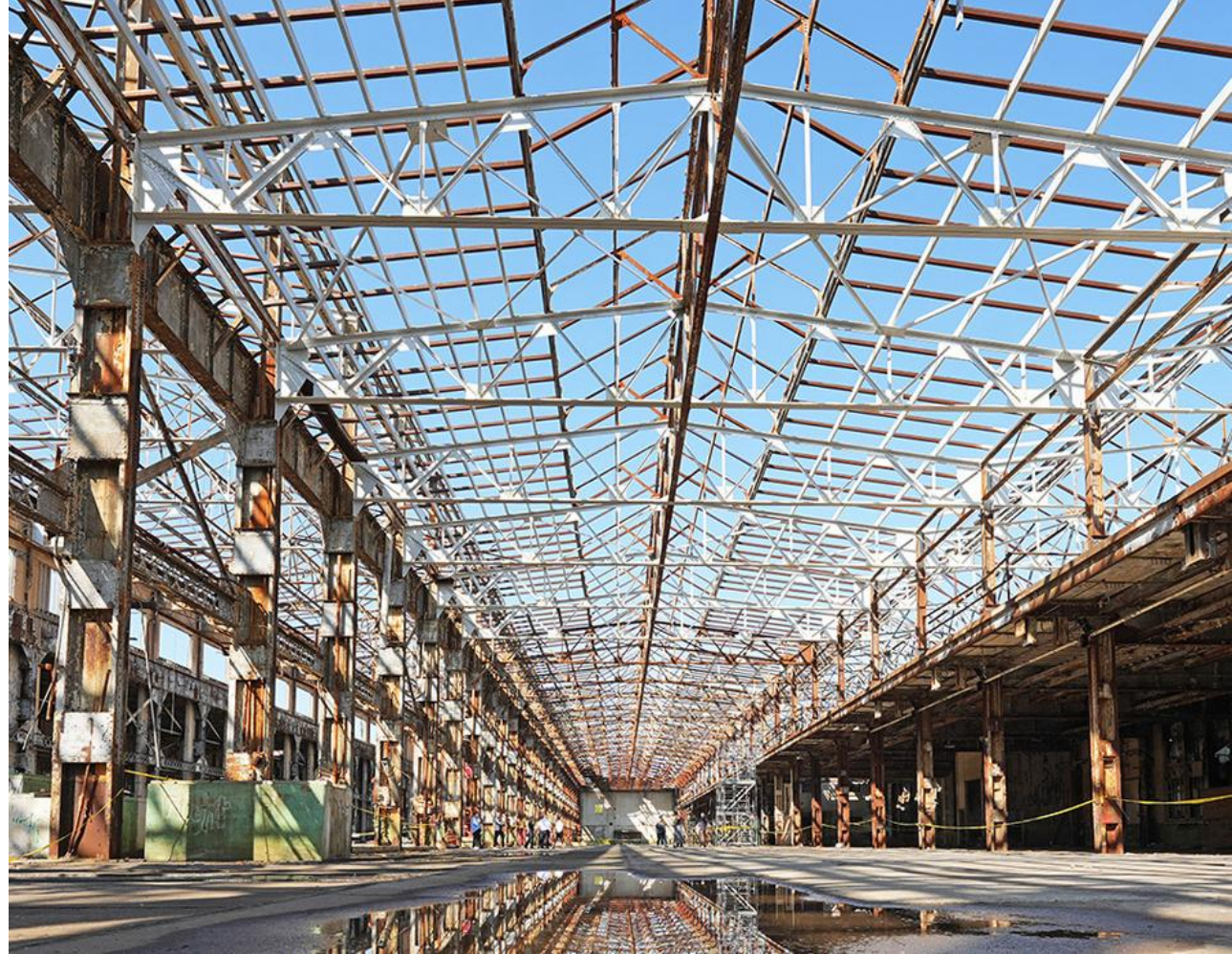


Grand Trunk Renewal Project

Typical Practices & Strategies in Brownfield Redevelopment

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WSP Canada Inc.



Purpose and Overview of Brownfield Redevelopment

Definition and Importance

Brownfield redevelopment transforms contaminated or underutilized land into safe, productive urban spaces, aiding revitalization and investment.

Project Challenges

The Grand Trunk site requires addressing contamination, regulatory compliance, and community expectations for successful redevelopment.

Remediation Strategies

Modern remediation includes excavation and removal, in-situ stabilization and/or containment, risk assessment and/or engineered controls to ensure environmental safety and approvals.

Municipal and Developer Roles

Understanding responsibilities of municipalities versus developers is key in managing costs, design constraints, and project timing.

Key Questions

Modern Remediation Practices

In-Situ Remediation Techniques

The most common approach is excavation. Other options, such as in-situ chemical stabilization and bioremediation can reduce excavation and lower waste disposal costs effectively under the right conditions.

Engineered Containment Systems

Geosynthetic covers and slurry walls provide long-term containment to prevent contaminant migration.

Risk Assessment for Redevelopment

Risk assessments allow redevelopment with administrative and engineering controls, minimizing full contaminant removal.

Green Infrastructure Integration

Incorporating green infrastructure enhances stormwater management and site resilience in remediation projects.

Key Questions

Is Capping Alone Sufficient?

Common Component of Risk Management

Capping contaminated areas with clean soil or engineered barriers is a common risk management technique.

Limitations of Capping

Capping reduces direct exposure but does not address groundwater contamination or vapour intrusion effectively. Installation of a cap prior to development may not make sense.

Need for Additional Measures

Groundwater containment, vapour mitigation, and monitoring are essential to meet health and regulatory standards.

Comprehensive Evaluation Required

Site-specific assessments determine if capping can be part of a broader remediation strategy.

Key Questions

Rail-Adjacent Development Constraints

Geotechnical Challenges

Vibration and slope stability near rail lines require reinforced foundations and specialized engineering solutions.

Environmental Contamination

Sites near rail corridors often contain petroleum hydrocarbons and metals, demanding thorough environmental risk assessments.

Safety and Coordination

Safety setbacks and close coordination with rail operators ensure regulatory compliance and minimize operational conflicts.

Noise and Vibration Mitigation

Mitigation measures for noise and vibration must be integrated into building design and land-use planning near rail corridors.

Key Questions

Municipal vs Developer Responsibilities in Remediation

Municipal Environmental Due Diligence

Municipalities handle baseline environmental assessments and define high-level remediation strategies to reduce liability and ensure regulatory compliance.

Developer Remediation Responsibilities

Developers manage site-specific remedial design, construction cleanup, and long-term maintenance of engineered controls like caps and vapour barriers.

Benefits of Role Clarification

Clear division of remediation roles increases developer confidence, accelerates redevelopment, and safeguards public interests.

Key Questions

Site-Wide Remediation Before Marketing: Pros, Cons, and Costs

City-Led Remediation Benefits

City-led remediation can potentially reduce buyer uncertainty and increase property values, despite significant upfront costs and logistical challenges.

Developer-Led Remediation Challenges

Developer-led remediation shifts financial burden but may lower purchase prices and requires detailed environmental data for assessments. *However, it may be most efficient (and cost effective) for remediation to be carried out in conjunction with early construction stages.*

Cost Factors in Remediation

Remediation costs depend on soil volume, depth, groundwater treatment, and choice between risk assessment or full cleanup.

Hybrid Remediation Model

A hybrid approach where the city handles assessment and strategy, leaving cleanup to developers, balances cost and marketability.

Key Questions

Timing, Cost, and Market-Readiness Factors

Project Timeline Influences

Environmental conditions and remediation strategies impact project investigation, monitoring, and approval timelines significantly.

Major Cost Drivers

Soil disposal, groundwater treatment, and site complexity are key factors driving remediation project costs.

Market-Readiness Criteria

Completion of Phase I & II ESAs, defined remediation strategy, transparent risk communication, and clear RSC pathway define market readiness.

Strategic Consultation Required

This question is normally addressed through a careful understanding of the development objectives for the property and a comparison of the relative differences between selected remediation strategies that are potentially applicable.



Thank you



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