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Brownfield Development a Viable Option for CRE Developers

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Have you ever driven by an old, dilapidated gas station, industrial site or strip mall and thought, "what a great location, why doesn't someone just tear it down and build something else?" Seems simple, right? These sites are likely brownfields, contaminated properties that pose an inherent danger to the environment and health of people that may come in contact with the soil, groundwater, or surface runoff. There are approximately 450,000 brownfield sites in the United States according to the Environmental Protection Agency (EPA), with Canada estimating over 200,000 sites.

Many government-led programs across the globe have been implemented to help remediate brownfield sites to provide economic and environmental benefits. The process for re-developing a brownfield site can be more challenging from a cost, legal and environmental perspective, however, if done correctly, and with the help from programs offered, developers can successfully redevelop these eyesores, bolster the economy, and protect the environment.

When a brownfield site is redeveloped, it creates economic and environmental benefits for the community by increasing surrounding land value and reducing further degradation of greenfield sites. A 2020 study by the EPA showed that 11%-13% of the jobs and housing growth expected between 2013-2020 in the U.S. could be supported on brownfield sites. In countries that are constrained by geography, brownfield redevelopment is critical to meet the demands of increasing population and economic sustainability.

When considering methods to mitigate a brownfield site, contamination is often divided into groundwater, soils, and soil vapor. Groundwater contamination can be addressed through pump and treat systems, where groundwater is pumped out of the ground, through a filter system, and then back into the ground. Certain contaminants can also be treated through injection of chemicals and/or bacteria into the groundwater, which will break down target contaminants through chemical or biological processes. In cases where groundwater contamination is minimal, the contamination can be left to naturally breakdown or attenuate over time.

Methods to address contamination in soil often depend on the nature of specific contaminants; the locality of the site; and the agency being used. In some cases, contaminated soil must be disposed of at specialized landfills which can be very costly. However, contamination to soil is considered relatively immobile and can safely be left in place if isolated or protected from the public through covering with impervious surfaces, building foundations, or a certain depth of clean soil stabilized with vegetation.

Soil vapor may also migrate from the contaminant plume into an overlaying building or structure, either through cracks in the foundation or via gaps around utility penetrations Once indoors, the volatile contaminants can accumulate and become a health hazard. Vapor mitigation systems can be installed to block this conduit from soil vapor to indoor air, including a robust chemical and vapor barrier designed for the specific chemicals of concern and passive or active venting installed beneath the foundation of a building. These systems can be designed into construction of a new building.

When contamination of soil or groundwater remains in concentrations exceeding established standards, a deed restriction can be filed that restricts use of the property to protect the public and environment in the future while contamination remains. The developer often has a choice in the extent of cleanup dependent on the desired use and can clean the site to residential levels to maximize its value.

Even with restrictions in place, some developers may choose to remediate to residential quality standards. This is particularly prevalent in Asian countries, as manufacturing plants migrate to more suburban areas and the formerly industrial facilities provide an avenue to address housing shortages via multi-family development.

As urban land for development becomes scarcer, brownfield development is a viable option for developers. Enhancing public awareness and understanding of the available resources and programs for remediation should entice more developers and owners. Working closely with attorneys and environmental consultants to carry out a plan and ensure the safety of the site, brownfield sites can provide significant environmental and economic benefits to the surrounding community by adding value to otherwise stagnant land.