

ARCADIS URBAN LAND RESTORATION INDEX

RANKING THE DEVELOPMENT POTENTIAL OF ENVIRONMENTALLY
IMPAIRED LAND ACROSS 27 U.S. CITIES



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"The future of highly competitive cities may rest within the unlocked value of industrial surplus property, which can serve as an engine to drive growth and transformation of neighborhoods and communities."

FOREWORD

As life returns to city centers, the demand for 'developable' urban real estate is growing. The transformation of the Inner Harbor in Baltimore and the creation of new vibrant urban centers in Denver, such as Stapleton, demonstrate that previously used industrial property has the potential to become some of the most sought-after real estate in the country.

Industrial land owners with large surplus properties in central locations hold the key to one of the critical challenges of re-urbanization, the creation of new places with scale and critical mass. Not only does the redevelopment of such sites provide an opportunity to transform urban communities, but it will enable impaired land owners to maximize the value of their underutilized properties.

Proactive cities recognize the role that real estate can play in driving sustainable growth. In fact, many have well-established regeneration programs in place to help transform previously used or environmentally impaired land.

Based on a 2014 survey Arcadis conducted with 45 global conglomerates, we found they collectively held over 20,000 properties deemed surplus. Given the clear potential for surplus properties held by industrial firms and public sector organizations in urban locations, what is holding back redevelopment and what can be done to more effectively bring these sites into productive use? The answer is complex. It remains a challenge to align the interests of industrial land owners, developers and city authorities, particularly where the owner may have a large portfolio of property in many cities, and when investing in regeneration is an expensive business.

Better quality information that accelerates the identification of cities and sites with the greatest

development potential will simplify and increase the certainty of the decision-making required.

One of the primary barriers can be the legacy of previous industrial land use. The redefinition of brownfield or environmentally distressed properties is often viewed as being too difficult, too expensive or too administratively cumbersome and thus owners and developers opt for a path of least resistance, seeking easier returns elsewhere. Again, poor quality information often leads to sub-optimal decision-making. So what is needed to break the barriers, unlocking the massive potential in these underutilized industrial surplus properties?

Our research indicates three key factors play a significant role in the restoration and redevelopment of an industrial property – the cost of cleanup (remediation) to address environmental issues; the current or future potential value of the land itself; and, a more abstract but critically important factor we refer to as city 'dynamism' which is a reflection of the attractiveness, growth potential, real estate performance, resilience, and business environment that drives competitive advantage for cities. While key indicators in real estate markets provide a baseline for short-term trends affecting residential and commercial development, they don't capture the long-term redevelopment potential of cities or the relative challenge of remediation.

The Arcadis Urban Land Restoration Index (ULRI) tackles these issues and identifies the cities where sites are most cost-effective to clean up while providing the greatest potential for long-term uplift and returns for residential, commercial, and mixed-use development. In effect, the ULRI highlights the best locations to unlock value from surplus property with environmental liabilities in key cities across the United States.

Surprisingly, not all of the opportunities highlighted by ULRI are located in the biggest cities in the U.S., such as New York and Chicago. A key ULRI finding for property owners is that their portfolio may include sites in newly dynamic mid-size cities that have much greater value than previously thought and will be less costly to cleanup than other, more obvious locations.

As the leading firm in environmental restoration within the private sector, Arcadis has unique visibility of the industrial surplus property market, including the size, location, and transformative potential of these properties across the U.S. The ULRI provides powerful insights which will help to garner investment by bringing together owners and private and public sector stakeholders to transform underutilized properties by creating an intersection of market opportunity, development demand, inventory of properties and a platform to integrate with a common redevelopment objective.

Do you own environmentally impaired property? Does your real estate footprint span major and secondary U.S. metropolitan markets? Are you plagued with carrying costs associated with impaired properties that are draining the profitability of your organization? Are you seeking development opportunities in vital and emerging markets across the U.S.? Are you an investor seeking opportunities to maximize your returns through

smart transformation of a largely untapped real estate market? Are you seeking to drive growth and competitive advantage in your city?

Planning of future developments in a city often involve the engagement and backing of local and regional governments as well as community groups through a series of approval processes before the project can move forward. The goal is to establish a connection with the public while building credibility and political support for the project.

By enabling industrial land owners, city leaders and developers to focus on common opportunities, the ULRI will help to unlock the potential of surplus industrial properties - breathing new life back into communities, creating a lasting legacy for citizens, and generating significant returns from prime, underutilized land.



Kurt Beil
Global Leader,
Environmental
Restoration



FOR THE
INDUSTRIAL
PROPERTY
OWNER

The ULRI provides a strategic decision-making tool that supports critical decisions on where and when to divest properties. It is a barometer, gauging the potential and attractiveness of cities for real estate investment, enabling owners to spot opportunities in their portfolio and helping them to maximize the value from divestment of their properties. Additionally, it provides a remediation cost index allowing comparative analysis to optimize spending on environmental restoration.



FOR THE
DEVELOPER

The ULRI supports the allocation of resources within individual markets or across an investment portfolio, and provides a broad indication of the potential cost and return on redeveloping environmentally stressed properties.



FOR THE CITY
LEADERS AND
PLANNERS

The ULRI highlights opportunities helping to drive growth and competitive edge, while also serving as a city-peer benchmarking metric highlighting locations that need to raise their game.

EXECUTIVE SUMMARY

The Arcadis Urban Land Restoration Index (ULRI) ranks the relative development potential from restoring and redeploying environmentally impaired industrial properties across 27 U.S. cities. It combines assessments of the cost of cleaning up contaminated land and the development potential for residential, commercial or industrial use. The ULRI addresses the common theme of uncertainty related to the perceived viability of integrated restoration and redevelopment projects across the country.

In particular, the greatest barrier to transformation of industrial properties is uncertainty related to:

- the cost of environmental remediation
- the likelihood of redevelopment, based on several factors including viable development interest and relative rate of return on the restoration investment.

Our key findings are that the redevelopment potential for different asset types (residential, commercial and industrial) varies from city to city and that some of the brightest opportunities are to be found in fast growing cities. Surplus industrial property holders may have a more valuable portfolio than they realize.

CITY INSIGHTS

- Boosted by innate city strength, continuing dynamic growth and relatively low remediation costs, **New York** tops the index as the best city location for remediation and development across all three asset types; commercial, residential and industrial
- **Charlotte** and **Nashville** are ranked in the top five, highlighting that smaller dynamic cities with strong real estate markets, good business fundamentals and lower remediation costs offer prime opportunities
- **Denver** presents the best opportunity for residential restoration development, and **Atlanta** makes it into the top five
- **New York** leads the commercial and industrial sweet spot analysis, with **Pittsburgh** and **Denver** doing well for commercial use and **Chicago** and **Los Angeles** place in the top five for industrial use
- While the dynamic city of **San Francisco** comes fifth overall despite the high costs, **San Diego** is in 22nd place
- **Atlanta** is a rapidly growing city that has potential for residential development on remediated land but is not the cheapest place to clean up. Furthermore, it is less attractive for either office or industrial development
- While **Baltimore** and **Phoenix** sit in the top 15 for low remediation costs there are big challenges around city dynamism – potentially making it difficult to secure an attractive return on investment, regardless of sector

RESTORATION INSIGHTS

- **Costs of full land remediation among cities vary by a factor of 2.5** – making the cost-effective management of site remediation and the selection of optimum properties a material consideration for developers and investors
- Major cities including **Houston**, **San Francisco**, **Los Angeles** and **San Diego** are all at the top of the cleanup cost spectrum, so potential developers need to be careful that they do not overpay for previously used contaminated land
- In most locations, the adoption of an alternative, restricted approach to land remediation can reduce costs and reap dividends. Using this method can catapult some cities up the ranking, while delivering the greatest value to industrial land holders as significant savings can be realized by tailoring the remedy (and associated cost) to the anticipated end use or specific redevelopment plan. For example **Dallas** is 20th in the overall ranking, but comes first for residential restoration development if a restricted approach is taken. Both **Houston** and **Dallas** are significantly more attractive as commercial development sweet spots on this basis. **Chicago** and **Washington** also have greater potential for commercial development using a restricted approach
- In high demand markets, an opportunity exists for industrial land owners to prioritize remediation of properties in dynamic markets, thus maximizing the net return on cleanup by:
 - divesting properties strategically in growth markets
 - completing restoration projects to deliver 'development-ready' properties to the market
 - coupling restoration and redevelopment in collaboration with planners, investors, and/or developers in target communities

- The benefits to the successful transformation of surplus properties extends beyond the project and for those who hold portfolios of impaired properties. The revenue, or capital, generated through the divestment/redevelopment can be reinvested to further support regeneration of additional sites.

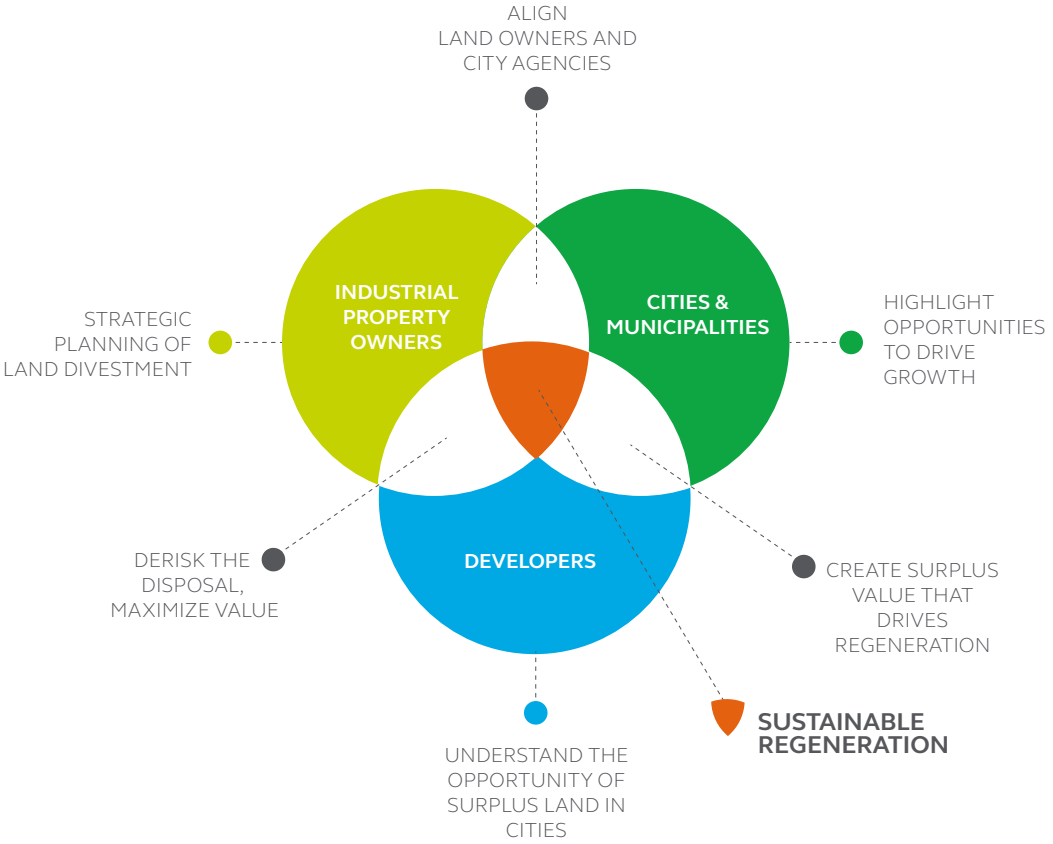
The ULRI demonstrates that there is significant benefit to industrial land owners, city leaders, and developers from a city-level understanding of the dynamics of development markets and variations in cleanup costs. A better appreciation of these factors will unlock restoration and redevelopment opportunities, contributing social, environmental and economic benefits to cities. Eliminating uncertainty is key to success.

Arcadis is the leading environmental consulting firm in the private sector, performing nearly \$500M in environmental restoration annually across the U.S., with over \$1B in guaranteed, fixed-price remediation programs completed in the U.S. to-date. Furthermore, Arcadis has led the integration of remediation, sustainable urban planning and design, and brought investors and developers together to deliver iconic projects that have become some of the most vibrant neighborhoods in urban environments throughout the U.S. and the world. This deep private sector knowledge and wide-reaching experience provides unique insights into the challenges and opportunities associated with industrial property restoration, which are captured in the ULRI.



THE URBAN LAND RESTORATION INDEX

URBANIZATION AND LAND RESTORATION – DEMAND FOR INDUSTRIAL PROPERTY



Cities are growing. After decades of people moving away from urban centers in search of a better quality of life, census data shows that the population of many of America’s cities has been growing faster than their suburbs. The revival of the great American city, driven by economic change and the popularity of urban living, creates abundant opportunities for industrial land owners who are holding surplus properties and developers with an interest in promoting urban development and restoration.

Growth is not just taking place in America’s largest cities. Across the country, mid-sized cities are rapidly emerging as the best places for creating jobs, the best places to live, and as evident in our research, the best places to invest. Meanwhile, in global cities such as New York and Los Angeles, insatiable international demand has pushed up property prices and construction costs to the point where often only schemes targeting global investors can reach their viability hurdle rate – crowding out vital regeneration investment.

Land, accessibility and resources are advantages the cities possess. Many urban environments are hosts to strategically located, underutilized properties. Much of this property is held in the legacy portfolios of industrial firms, primarily multi-national companies. Although many of these sites face environmental challenges, they nonetheless offer significant financial opportunity based on timely divestment, restoration,

Working with government and communities to develop and take forward strategies that attract support and resources from the public sector before engaging in a brownfield redevelopment is important. Planning of future developments in a city, township or village often involve the critical engagement and backing of local and regional governments as well as community groups through a series of approval processes before the project can move forward. Gaining consensus of government and community on new developments can be accomplished through community engaged interaction, positive messaging, and project transparency. The goal is to establish a connection with the public while building credibility and political support for the project.



and smart redevelopment. In effect, the continuing renaissance of mid-sized cities may be creating unexpected pockets of untapped value in the real estate portfolios of industrial land owners.

At Arcadis, we understand the intricacies of competitive cities and the challenges that cities and entrepreneurs face in achieving truly sustainable urban development. We also understand the challenges that industrial land owners face when having to drive shareholder value and bottom line performance, particularly given the limited resources available to address liabilities associated with surplus land. However, when delivered collaboratively and effectively, investment projects like these will deliver great outcomes to the land owner and the city. The risk is that impaired industrial properties in great locations with high development potential will be overlooked in favor of safer, lower-

impact options that are easier to appraise and develop.

For both industrial land owners and cities alike, our experience, backed by ULRI data, highlights the immense opportunities that exist in both mature and emerging cities, where the continued migration towards urban environments is driving a rapidly growing need for 'developable' property. From New York to Nashville, trends indicate that significant investment dollars are being pumped into smart and sustainable development projects in urban centers across the United States, where impaired former industrial properties can meet the demand for land. Critically, our on-the-ground experience points to a highly varied spectrum of opportunity, ranging from cities that offer immediate opportunities to restore and redevelop industrial properties, to those where markets have stalled or where real estate cycles suggest longer-term

opportunities for investment may exist.

At Arcadis, we believe that by focusing on cities with the greatest potential and fewest barriers to restoration, it is possible to create outstanding sustainable and investment opportunities, while simultaneously creating a platform for industrial land owners to effectively divest environmentally impaired properties. We have created the ULRI as a tool to empower industrial land owners; developers, investors, and city leaders to make informed, smart decisions by identifying cities with the greatest potential to create value. In doing so, the ULRI serves as a foundation for sound, strategic decision-making when it comes to the management and divestment of environmentally impaired property in today’s dynamic real estate market.

THE CHALLENGE OF CLEANING UP INDUSTRIAL SURPLUS PROPERTY

One of the greatest challenges that owners of environmentally impaired industrial properties face is how to transform surplus land liabilities into assets. Environmental cleanup (remediation) is essentially a 'red-line' business, meaning site restoration nearly always represents a bottom line cost to an organization, eroding profits and financial performance and carrying continued potential risk exposure over time.

High remediation costs might mean that surplus property has no commercial value at all. Furthermore, the time and expense of remediation may affect the timing and cost of redevelopment, which can serve as a tipping point that determines whether a project moves forward.

As a result, surplus properties often remain idle as static liabilities, languishing in a distressed state, providing little or no value to either the land owner or the communities

in which these properties exist. Barring regulatory pressures or a catalyst to drive remediation such as a property transfer, the cleanup may take years or even decades to complete. The impact is a lasting financial drain on the industrial property owner and a barrier to prosperity in the community. Land owners must work with governments and the communities to develop and take forward strategies that attract support and resources before engaging in redevelopment.

Remediation costs are highly site specific and need to be assessed on a project by project basis. However, Arcadis analysis undertaken specifically in connection with the ULRI shows that there not only are large, systematic variations in remediation costs between cities, but also that there are opportunities to reduce costs in many locations by adopting a tailored approach, such as restricted closure in a risk-based approach, to design the remedy to meet the intended end use for the property. Armed with these two key insights, industrial land owners can identify sites in their portfolio which will be potentially less costly and less risky to clean up and divest.

SURPLUS PROPERTIES: DECOMMISSIONING TO DIVESTMENT

From scheduled decommissioning to divestment, Arcadis provides a lifecycle approach to portfolio management, whether the clients goal is to reduce liability and find an exit out, create a value-add divestment strategy or implement operational efficiencies for an asset.

'Lifecycle' Portfolio Management:

We have demonstrated accomplishments and clear evidence showing the value of implementing a "lifecycle" management approach versus a linear, "silo'd" approach to portfolio management and liability reduction.

Decommissioning/Remediation Strategies:

The ideal time to consider a property exit is once an asset is identified for decommissioning. A divestment strategy can support an efficient remedial plan that can reduce decommissioning costs. ARCADIS' award winning "D4 team" is internationally renowned for safe and thorough deactivation, decommissioning, decontamination and demolition that results in the highest and best use of the asset.

Innovative Divestments

Strategies: As assets are decommissioned and become surplus properties, liabilities arise and need to be managed.

Our divestment strategies and reuse planning services support the earliest stages of portfolio management with a fully integrated program to reduce risk, mitigate liability and remedial cost through value-add reuse planning to aid in buyer project financing upon divestment.

Regeneration/Reuse Planning:

Regeneration establishes the reuse potential and identifies the planning process to secure the value of a property, which can extend through land planning and entitlements, to maximize the potential value. Such planning can be applied independently or sequentially to address the unique interests of each client.

Investor/Private Equity Partners:

A critical component to the Surplus Property Program is our unique relationships with private equity firms. These relationships enable us to provide clients with introductions to qualified equity partners and buyers, as well as structuring the

transfer of environmental liability and remedial obligation.

Transaction Management:

The final phase of the 'lifecycle' of an asset, is transferring or conveying the asset. A successful remediation and divestment strategy is not successful unless the asset is transferred successfully. Whether it's a sale, donation or conveyance, we provide transaction management to oversee the transaction, providing complete 'turn-key' real estate solutions, from decommissioning to divestment.

Natural Capital Value: A unique strategy to monetize an asset is leveraging the economic benefits of Natural Capital. Arcadis brings the range of expertise needed to support clients seeking to leverage the benefits of their Natural Capital in ways that can yield capital – tax, fiscal, and reputational – back into their business.



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INDUSTRIAL SURPLUS PROPERTY – UNTAPPED INVENTORY OF POTENTIALLY HIGH-VALUE LAND

The immediate and latent costs of ongoing environmental liabilities can be staggering, and the best way to mitigate these costs is by bringing properties back into beneficial, productive use. Our analysis highlights one potential avenue to tackle this issue - connecting the inventory of underutilized properties in the market with the development potential in cities around the U.S.

The nexus of environmental restoration and real estate development in dynamic and/or growing cities creates the option to convert surplus land liabilities into an opportunity to divest, transform and generate value from otherwise underutilized properties. The financial benefits of effective restoration and redevelopment projects extend well beyond the elimination of the liability and the profit derived from the regeneration. In addition to the economic boost, the transformation of impaired properties will create value by enhancing the natural and built environment, demonstrating environmental stewardship and delivering wider social benefits. At the same time the industrial land owner benefits from elimination of carrying costs through divestment of under-performing properties and improved image. A city can expect to benefit from ongoing sources of revenue generation, increased tax base and job creation.

Effective management and restoration of environmentally impaired properties starts with a strong strategy, informed decision-making and certainty that desired outcomes for the numerous and diverse stakeholders will be achieved. To highlight both the challenge and the opportunity, take for example the New York City Mayor's Office of Environmental Remediation which estimates that properties transformed through their Voluntary Cleanup and Brownfields Programs remain vacant on average 18 years, while the impact of remediation has a

The New York City Mayor's Office of Environmental Remediation (OER) is focused on unlocking environmental, social and economic value from distressed properties across the city

The OER estimates that annual benefits to the city as a result of restoration and redevelopment of environmentally impaired surplus properties through their Voluntary Cleanup and Brownfield Incentive Grant Programs are as follows:

- \$2.2B in new private capital investment
- 6 million square feet of new building space
- 2,200 new permanent jobs
- 6,500 construction jobs
- 1,000 new affordable housing units
- \$350M in tax revenue

The program effectively transforms blighted properties, creating safer conditions, enables new development, and creates an economic engine in the neighborhoods and communities that need it most.

www.nyc.gov/html/oer/html/about-oer/about.shtml

significant direct impact on the economic development and vitality of neighborhoods across the city.

Furthermore, by coupling restoration, redevelopment and planning, all key stakeholders can gain the elusive certainty that is often missing when a compartmentalized approach is taken, separating each phase of the project from cleanup through realization of the final development scheme. Our experience is that integration drives efficiency, tightens schedules, reduces cost as well as the redevelopment's environmental footprint, and increases certainty.



SUPPLY AND DEMAND – INDUSTRIAL SURPLUS PROPERTY CREATES AN OUTSTANDING OPPORTUNITY

Understanding micro-market momentums and local jurisdictional initiatives aimed at redeveloping vacant or fallow industrial land is vital to portfolio managers and owners of corporate-owned, environmentally impaired real estate. As portfolio managers manage various types of properties within a number of portfolios across vast regions, it is quite common that two types of properties garner managers' attention: those that are under community or regulatory pressure for remedial action (such as a consent order) and those that have pending offers to purchase; and many times the latter is typically procured on an unsolicited basis. An index that provides national data on market insights demonstrates where opportunities exist for cost-effective closure and alternative programs, allow for tailored cleanup to suit redevelopment scenarios and is the first step in identifying targeted areas for divestment and development.

The critical next step is to engage the public, encourage local participation and develop solutions aimed at promoting the reuse of impaired industrial land.

The collective insights from the ULRI coupled with an effective process for impaired property transformation provides portfolio managers with a valuable tool to effectively manage or redeploy remedial spend to create divestment strategies on those properties that have the greatest potential to generate value for the owner – whether that is measured in the mitigation of liability, reduction of provision and overhead costs, recapturing a percentage of remedial costs or actually generating revenue from the sale of such non-performing assets.

Future economic growth will be driven by the development of cities. In all, 600 cities will generate 60% of global GDP growth between now and 2025¹. Interestingly, the most rapid rates of growth will come from mid-sized cities. For global cities such as New York, the costs associated with scale and an unprecedented concentration of activity mean that although no other U.S. city can rival New York for GDP, many are more attractive locations for new business, evidenced by faster growth in housing prices and high demand for office space.

This dynamic balance between long-term city power and near-term vigor is at the heart of city dynamism – and according to our research – is a powerful indicator of the best opportunities for industrial property divestment and development.

However, the million dollar question is how are the best sites identified? Large numbers of surplus property are held in portfolios of sites, varying in size, location and degree of contamination. Industrial land owners who have the insight and wherewithal to focus and accelerate their efforts in identifying the best potential sites will have a valuable competitive advantage. Knowing where and when to redevelop environmentally distressed property could provide the key to unlock the untapped value in these 'developable' properties.

What makes a site ripe for restoration? Of course the old adage of location, location, location applies, but attractive or desirable locations, based on a number of factors that go beyond the remediation itself, are evolving and assumptions need to be tested.

Successful redevelopment – especially the successful reuse of surplus property within the urban core of cities – also relies on public participation that can come in many forms, i.e. expedited zoning approvals, zoning overlays, density bonuses, defined redevelopment project areas and financial


incentives, such 'gap financing,' to name a few. Gap financing refers to the shortfall, or gap, of equity needed to obtain an acceptable debt-to-equity ratio as required by a lender. In this instance, the amount of debt a project requires exceeds the lenders maximum ratio and financial participation from a jurisdiction is critical for the feasibility of a redevelopment project. At Arcadis, we recognize that identifying the right location is not an easy process, and when faced with a number of competing financial demands, making smart decisions with tangible benefits and returns is critical to success. In response to this unmet market need and to create the key insight, we developed the ULRI.





FOR THE INDUSTRIAL PROPERTY OWNER

The ULRI is a strategic tool that supports critical decisions on where and when to divest properties, enabling triage of sites in a portfolio that are likely to be high value 'diamonds' and lowering the risk of surplus property disposal. The ULRI serves as a barometer, comparing relative remediation costs across 27 cities, and gauges the potential and attractiveness of cities for real estate investment, enabling owners to spot opportunities in their portfolio and helping to maximize the value of their properties.



FOR THE DEVELOPER

The ULRI supports the allocation of resources within individual markets or across an investment portfolio, and provides a broad indication of the potential cost and return on redeveloping environmentally stressed properties, allowing for a weighted assessment of the attraction of properties and prioritization of opportunities for further viability analysis.



FOR THE CITY LEADERS AND PLANNERS

The ULRI highlights opportunities helping to drive growth and competitive edge, while also serving as a city-peer benchmarking metric, highlighting locations that need to raise their game. The ULRI provides a better understanding of the competitive position of a city and highlights the key factors critical for effective transformation of under-utilized industrial sites.

THE URBAN LAND RESTORATION INDEX - UNLOCKING THE VALUE OF IMPAIRED INDUSTRIAL PROPERTY

The Urban Land Restoration Index (ULRI) combines insight on city dynamism and the relative environmental clean up (remediation) costs in 27 cities across the U.S. to identify locations with the greatest opportunities for divestment, restoration, and development of impaired industrial property. Unlike a typical house price index, such as Case-Schiller, the ULRI looks at a range of indicators of economic health, includes an assessment for different property sectors (residential, commercial, and industrial) and takes into account some of the difficulties associated with restoring and developing environmentally distressed industrial properties. The result is a new and unique view on where the restoration of industrial land is most economical and where surplus industrial properties can meet the growing property demands for cities across the U.S. – the convergence of restoration and redevelopment opportunities.

The ULRI builds on previous work in the Arcadis Sustainable Cities Index – providing a more focused analysis of land regeneration and real estate drivers.

This index is intended for use by industrial land owners, investors in property and real estate, property developers and city leaders – in fact the findings are relevant to any organization considering a transaction involving previously

used industrial land in urban locations. Ultimately, investment and divestment decisions need to be based on a proper feasibility study, and the ULRI provides the triage so that detailed appraisals are focused on locations with the best potential.

The two key elements behind the ULRI assessment are **City Dynamism and the Cost of Cleanup**, which when combined yield a unique parameter referred to as the restoration 'sweet spot'. The cost of remediation in and of itself is not unique, however when coupled with a number of factors that affect a city's 'dynamism', the resulting 'sweet spot' quickly identifies markets where divestment and development of industrial property can yield highly valuable results.

The undeniable intangible results of new investment into a neighborhood: new housing and commercial replaces blight and crime; new families move in and businesses open up; property values increase and begin to contribute into the viability of the city's economic basis.

CITY DYNAMISM

We have developed a measure of city dynamism that combines several factors; a city's attractiveness, growth potential, real estate performance, resilience and business environment. These are factors that drive competitive advantage for cities, and highlight

¹ McKinsey Global Institute

those that are attractive investment locations.

The ULRI helps to answer whether established, high value locations such as New York are the best bet, or if it is better to follow the hot money into buoyant regional city real estate markets such as Denver.

Owners and developers who are able to take advantage of the dynamism of a city at the early stages in its growth cycle may be able to secure particularly good returns from their investment.

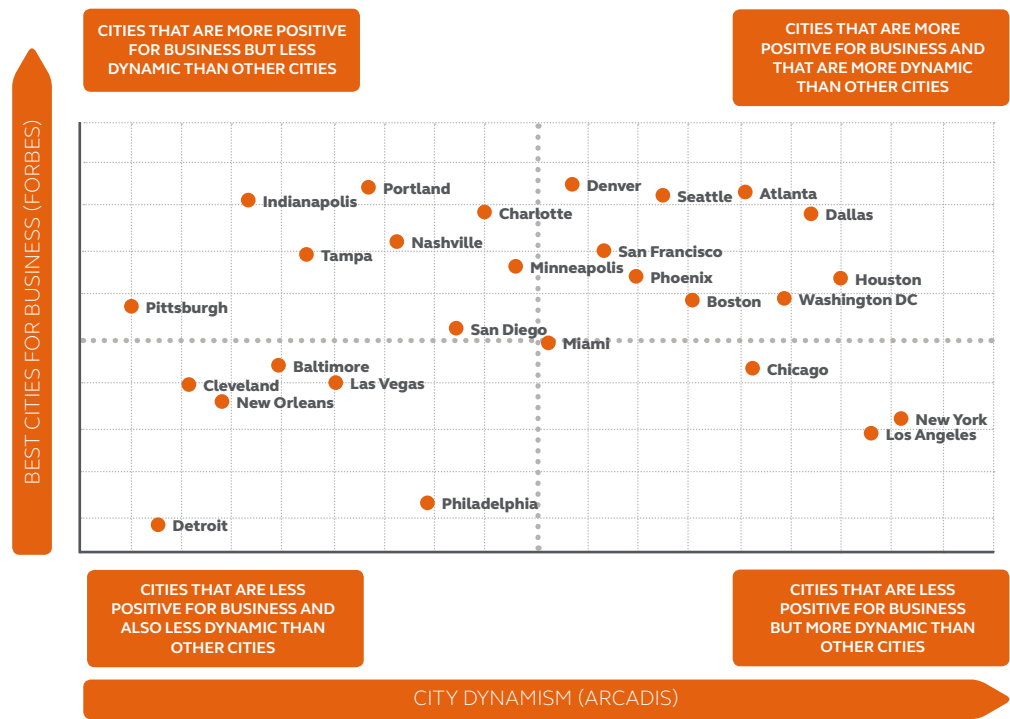
Our assessment of city dynamism takes into account three key measures that influence the long-term attraction of a city as a focus for potential real estate development:

- the current state of real estate markets for residential, commercial and industrial property, which is cyclical and varies between cities, measured using proxy based on a combination of vacancy levels and price inflation
- the inherent strength of a city, determined by population, the size of the economy and GDP
- the vigor of a city in the medium term is measured using a series of metrics including the cost of doing business, rate of jobs growth, quality of the workforce and wider measures of the city's overall business environment. Our measure provides a relative assessment of vigor based on a combined index of normalized quantitative and qualitative data.

The combination of these three measures demonstrates that well-established cities may not always have the strongest real estate markets or the most supportive business environments.

While the URLI cannot assess the way in which a city will promote itself as a development location through ordinances and zoning, or the particular characteristics of a site, our assessment of city dynamism does provide a robust

Figure 1: Arcadis city dynamism versus best cities for business



high-level indication of the relative attraction of a city.

By accounting for the different dynamics of the residential, commercial and industrial sectors, the ULRI provides an added dimension of insight – highlighting cities which have the greatest potential in a particular development sector and flagging sub-sectors that are lagging behind.

Figure 1 highlights a select group of cities that are great for business and are growing rapidly. These include Houston and Dallas – reflecting the recent economic vigor of the Southwest, but exclude New York, Chicago and Los Angeles – cities that have inherent strength from decades of growth but are less attractive as business locations due to high costs and labor constraints.

Based on this analysis, industrial land owners that look beyond their properties in the largest cities, may find greater demand due to redevelopment opportunities – particularly if the costs and risks of remediation are also relatively low. This means that a surplus property

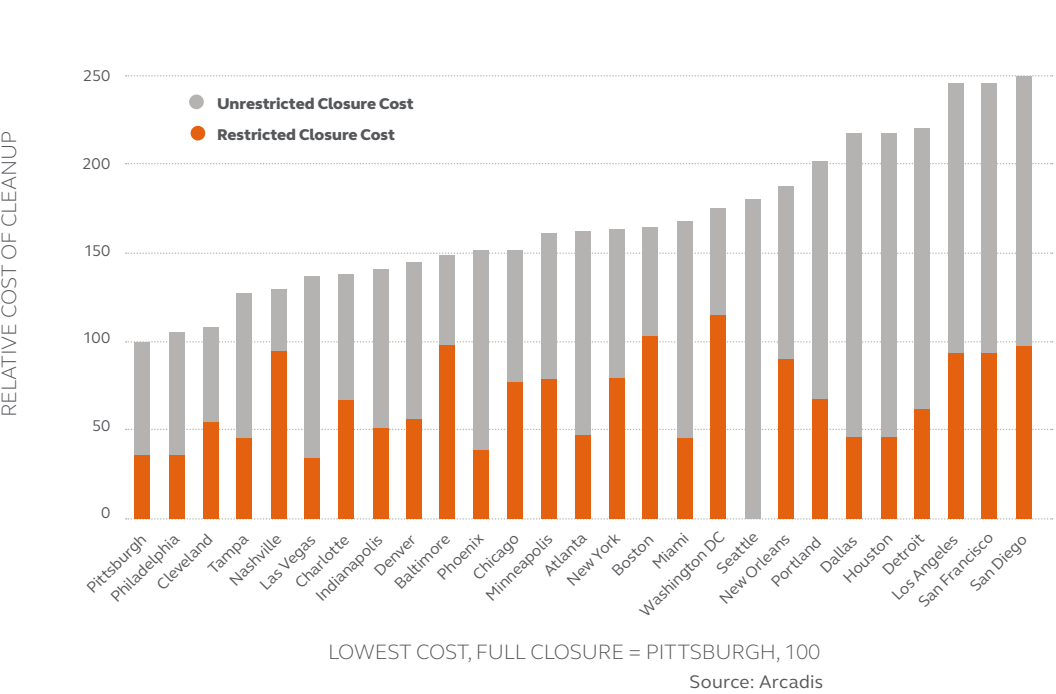
portfolio may be worth more than previously thought, and needs greater urgency as city growth phases are dynamic and evolve in the long-term. Opportunistic and timely divestment in these cities can maximize net returns from industrial properties, as the heightened demand can offset the cost of transformation. Further details of the data used to compile city dynamism are set out in the Appendix.

COST OF CLEANUP

Variations in remediation costs, or the cost of cleanup, are also built into the ULRI – incorporated as another measure of relative attraction. The analysis is based on the data presented in figures 2 and 3.

Our assessment of cleanup costs across 27 cities in the U.S. shows that the cost of full remediation can vary by a factor of 2.5 – providing insights into opportunities for cost-effective restoration programs as well as potential barriers to restoration viability. San Francisco, Los Angeles and San Diego are at the top of the cost league. By contrast, dynamic

Figure 2: Cleanup costs



high-growth cities including Nashville, Charlotte and Denver have half the remediation costs of the most expensive locations.

However, well-advised investors can vary the scope of work by adopting tailored, restricted remediation techniques that suit the desired end use of a given property. This typically lowers cleanup cost by up to 60% and also the variation in cleanup costs between cities.

Figure 2 plots the relative costs of both unrestricted remediation (i.e., clean closure) and restricted remediation (i.e., cleaned to suit end use and risk-based cleanup) where the lowest cost, full remediation option is 100, based on costs of Pittsburgh with a restricted remediation index of 36.



The key findings of our modeling of cleanup costs are:

2.5
TIMES MORE
COSTLY

Costs vary by more than 2.5 times across the modeled cities

50%
COST RANGE

The cost range for the bottom 10 locations is less than 50% - a significant but not insurmountable differential

58%
AVERAGE
SAVINGS
RESTRICTED
CLEANUP

The average saving associated with restricted cleanup is 58%. The cost range for restricted remediation is much narrower. Restricted techniques, where applicable, provide an opportunity to streamline restoration and tailor the cleanup to a designated end-use.

This assessment shows only three locations have restricted remediation index values exceeding 100 – the lowest cost, full cleanup location. One of these is Seattle, where restricted remediation is not permitted. Figure 3 sets out the index values for full and restricted land remediation in 27 cities.

The key takeaways from the analysis are first, that cleanup costs vary significantly and systematically between cities and hence are a key variable in early site selection. Secondly, remediation costs can be mitigated up to 60% by using restricted remediation techniques.

Arcadis works with many Fortune 500 companies to manage and extinguish environmental liabilities and dispose of impaired surplus properties; we have used this

Figure 3: Summary cost differentials for land remediation

LOCATION	UNRESTRICTED CLOSURE COST	RESTRICTED CLOSURE COST
	INDEX, LOWEST UNRESTRICTED CLOSURE COST= 100	
Pittsburgh	100	36
Philadelphia	105	36
Cleveland	108	54
Tampa	127	46
Nashville	130	94
Las Vegas	138	34
Charlotte	139	67
Indianapolis	141	51
Denver	145	57
Baltimore	149	98
Phoenix	151	39
Chicago	152	77
Minneapolis	162	79
Atlanta	163	48
New York	164	80
Boston	165	103
Miami	169	46
Washington DC	175	116
Seattle	181	181
New Orleans	188	91
Portland	203	67
Dallas	219	46
Houston	219	46
Detroit	221	62
Los Angeles	247	94
San Francisco	247	94
San Diego	251	98

insight and expertise to inform the development of the ULRI. Knowing if, where and when to restore, divest, and transfer properties can be the difference between years of lingering liability and carrying costs, and the immediate opportunity to maximize returns from underperforming properties.

RESTORATION SWEET SPOTS

Locations that are both dynamic and have comparatively low remediation costs score highly in the ULRI. We term these locations ‘sweet spots’. What makes a ‘sweet spot’? The balance of cost of cleanup, ease of execution, the thriving force of an attractive market, and the ability to deliver value to a community, which is absolutely to drive the redevelopment to completion.

Industrial property owners and investors are well-advised to target property sale (divestment) and development in areas currently identified as having high potential – especially if remediation costs are relatively low on either a ‘one-off’ single site scenario or a portfolio basis. According to our research, typical remediation costs vary across our sample of U.S. cities by a factor of 2.5, meaning the cost of cleanup for an equivalent parcel of land with equal levels of contamination and targeted end use for development more than doubles between selected cities.

The sweet spot indices are tailored to asset classes such as residential, providing a rapid means to identify the best located sites in a portfolio to suit a given portfolio distribution or business model.

Sweet spot locations don’t just cover the big cities such as New York and San Francisco. Sweet spot cities also include younger, faster growing cities that may not have the critical mass of Chicago, but have stronger growth characteristics and often lower remediation costs – for example Charlotte, with its booming financial services sector or Nashville and its jobs-led recovery.

FROM SPACE ROCKETS TO VIBRANT COMMUNITIES IN L.A. SUBURB



CONTAMINATED 160-ACRE FORMER AIRCRAFT AND AEROSPACE FACILITY

NOW ENJOYED BY 800K+ RESIDENT COMMUNITY, VIBRANT BUSINESS, RETAIL AND LEISURE FACILITIES

STIMULATED \$800M PRIVATE INVESTMENT AND \$45M IN LEASE AND TAX REVENUES



A suburb of Los Angeles, Downey, California was once home to the United States National Aeronautics Space Administration (NASA). The former NASA Industrial Plant was instrumental in paving the path to the United States’ space program legacy, as the site was used to manufacture critical components of both the Apollo Space Program, which landed Americans on the moon, and the subsequent Space Shuttle Program, which made space travel and exploration routine. As these crucial programs came to an end, the federal government turned over the 160-acre property to the community, creating an opportunity for a new and continued legacy for the people of Downey. Recognizing the value of the prime real estate, city officials embarked on a program to redevelop the site.

The redevelopment did not come without its challenges, as decades of industrial use left the site with significant environmental issues that needed to be addressed. Arcadis was retained to not only complete the restoration of the property, but also to serve as an integrator, playing a critical role

in stakeholder management, balancing the needs of NASA, the U. S. Environmental Protection Agency (EPA), the state of California, the city of Downey, two developers and an existing tenant, paving the way for redevelopment. Arcadis collaborated to design an innovative and adaptable remedy tailored to meet the aggressive development schedule and critical performance objectives for the cleanup, while achieving the end state vision of the client and community. Arcadis successfully delivered an award-winning, guaranteed solution which resulted in early transfer of the property by integrating the approach to restoration and redevelopment, driving efficiency and ultimately creating a vital engine to fuel the local economy.

GENERATING RETURNS

Downey Landing provides the city of Downey with important sales tax revenues that fund city services. Downey is expected to realize an estimated \$45M in leases, sales tax and property tax revenues by 2020. In addition, the Downey project has stimulated more than \$800M in private investment.

The Downey redevelopment and remediation project proves that when risk is managed, impaired properties can be restored for community use, stakeholder value is enhanced and bottom-line performance is maximized to provide long-term financial stability for the city. The U.S. EPA recognized the environmental remediation effort with the Phoenix Award and NASA awarded Arcadis with a Group Achievement Award.

THE SWEET SPOTS – OPPORTUNITIES WHERE PROPERTY DIVESTMENT MEETS DEVELOPMENT NEEDS

The ULRI highlights New York, Charlotte, Denver, Nashville and San Francisco as locations with the greatest potential.

These findings reflect, for example, the massive growth of financial services in Charlotte and a strong technology and telecom sector in Denver. The ULRI confirms the rapidly changing shape of real-estate markets in the U.S. which means that, while major cities such as New York will always be featured, it is clear that growing small to mid-size cities present alternative options where development may be easier and financially sound to deliver.

This assessment accounts for all three asset types; commercial, residential and industrial and **highlights New York as being the best location.** This is credited

to New York’s combination of its innate city strength, continuing dynamic growth and the fact that its remediation costs are not as expensive as a number of other cities. New York’s negative factors – the high cost of doing business, and a static housing market - do not outweigh its natural strength as a leading global city. The implication for New York is that it will continue to be able to recycle complex sites for new development – evidenced by huge investment flowing into Hudson Yards and other locations in the previously industrial Lower West Side of Manhattan. The implications for investors are that demand for properties is high, driving up prices and highlighting the importance of effectively managing risks and uncertainty associated with unknown remediation costs. As a

result, other locations may be able to deliver equivalent returns at a lower risk.

However, for other large U.S. cities that share the inherent strengths of New York, such as Houston and Los Angeles, their attractiveness diminishes when remediation costs are taken into account. This indicates that it is more difficult to attract investment and drive sustainable development.

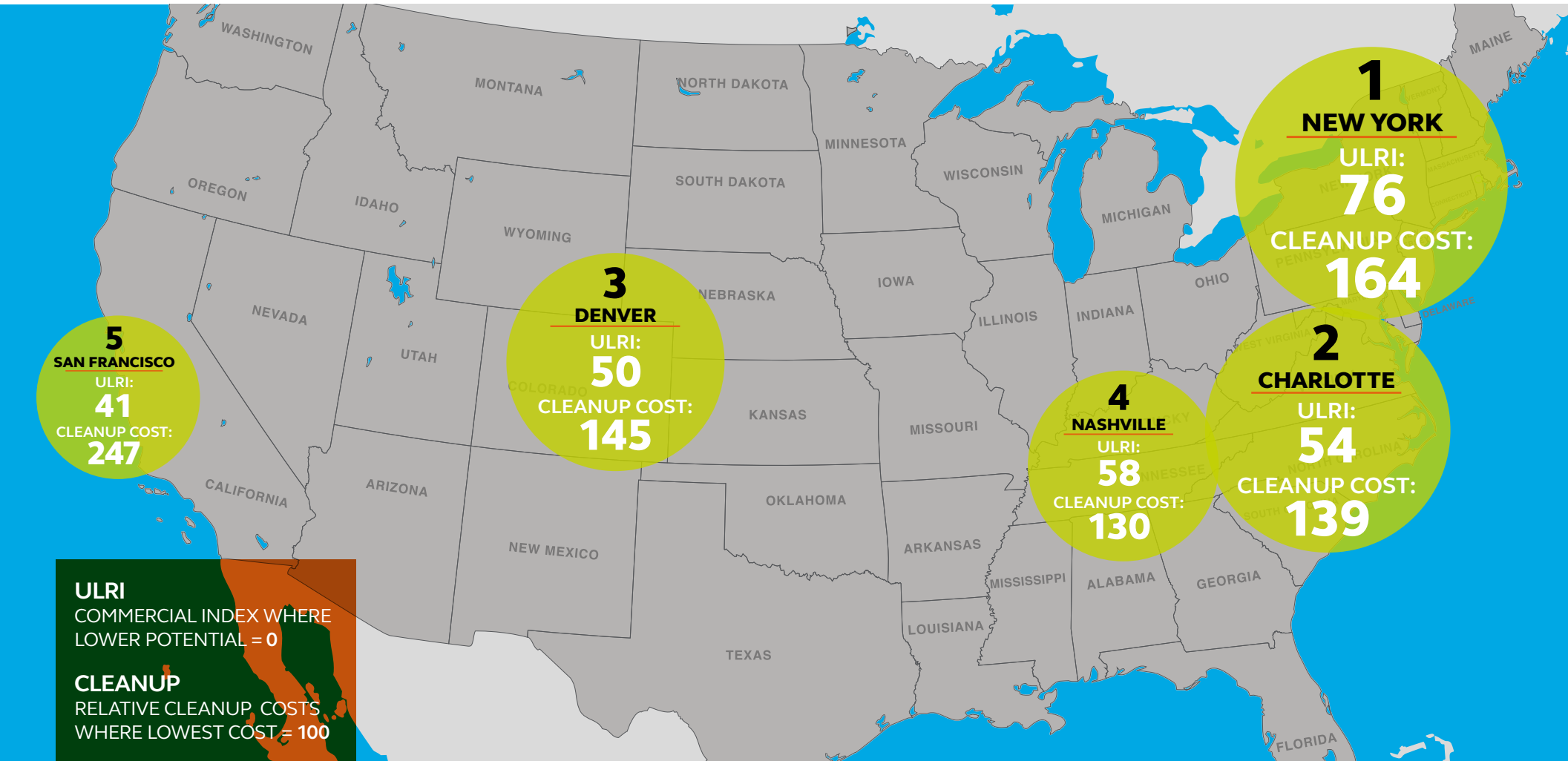
By contrast, the ULRI highlights smaller dynamic cities, including Charlotte, Pittsburgh, Nashville and Portland as restoration sweet spots due to strong real estate markets, good business environment and crucially lower relative remediation costs. Portland, for example, is seeing high levels of inward migration from California cities supported by migrating technology and start-up companies, while Pittsburgh has rebuilt itself around new specialties in education, healthcare and innovation. In these cities, the ability to leverage former industrial surplus properties to fuel the transformation represents an immediate opportunity. While Detroit currently ranks low on the Index, recent trends show that the real estate market is on the upswing and that may present new development opportunities.

Our analysis poses the question to the industrial land owner or investor, is it better to target a dynamic city such as Charlotte, or an established, more expensive location, such as Houston? The wrong answer risks focusing efforts on a sub-optimal investment in a less dynamic city location. The right answer yields greater short-term gains that capitalize on the broader trends that our research has exposed. While the final investment decision will be based on a full investment appraisal which is intended to mitigate this risk, the ULRI highlights the best available choices, including the investment and divestment opportunities that have opened up since the 2008 crash.

Figure 5: The Urban Land Restoration Index

CITY	OVERALL RANK	CLEANUP COST	ULRI
New York	1	164	76
Charlotte	2	139	54
Denver	3	145	50
Nashville	4	130	58
San Francisco	5	247	41
Pittsburgh	6	100	51
Chicago	7	152	44
Miami	8	169	39
Portland	9	203	39
Los Angeles	10	247	31
Seattle	11	181	39
Houston	12	219	37
Minneapolis	13	162	36
New Orleans	14	188	38
Tampa	15	127	36
Philadelphia	16	105	35
Washington DC	17	175	37
Atlanta	18	163	33
Indianapolis	19	141	30
Dallas	20	219	28
Boston	21	165	33
San Diego	22	251	19
Las Vegas	23	138	20
Cleveland	24	108	22
Baltimore	25	149	28
Phoenix	26	151	17
Detroit	27	221	0

Figure 4: The ULRI enables land owners to quickly identify opportunities in their surplus land portfolio



THE MOST ATTRACTIVE CITIES – BREAKING IT DOWN BY ASSET TYPE

Our analysis shows clear differentiation between a city’s attractiveness relative to specific asset classes (commercial, industrial and residential). This is important given land zoning or opportunities to respond to emerging trends in sustainable urban development. Figures 6 and 7 highlight how index values for cities vary for commercial and residential redevelopment.

Our more detailed, sector-specific analysis shows that while some locations are attractive for all asset types, such as Nashville and Denver, the potential for other locations vary strongly according to asset type. A high office vacancy rate or low residential sales rates can indicate a weak sector-specific development market in an otherwise strong location. Pittsburgh and Las Vegas are good examples, with contrasting strong and weak performance in the commercial and residential sectors respectively. The recovery of the Las Vegas housing market reflects the wider attractions of living in Nevada rather than a jobs boom in the city. Industrial land owners who understand these differentials will be well positioned to present opportunities to the developer community effectively – maximizing the opportunity associated with property disposal.

In addition, just as some cities are inherently strong, others are much weaker. We call these ‘weak spots’. Detroit for example stands out due to the long-term impact of economic

Figure 6: Commercial Development Restoration Sweet Spot Index (2015)

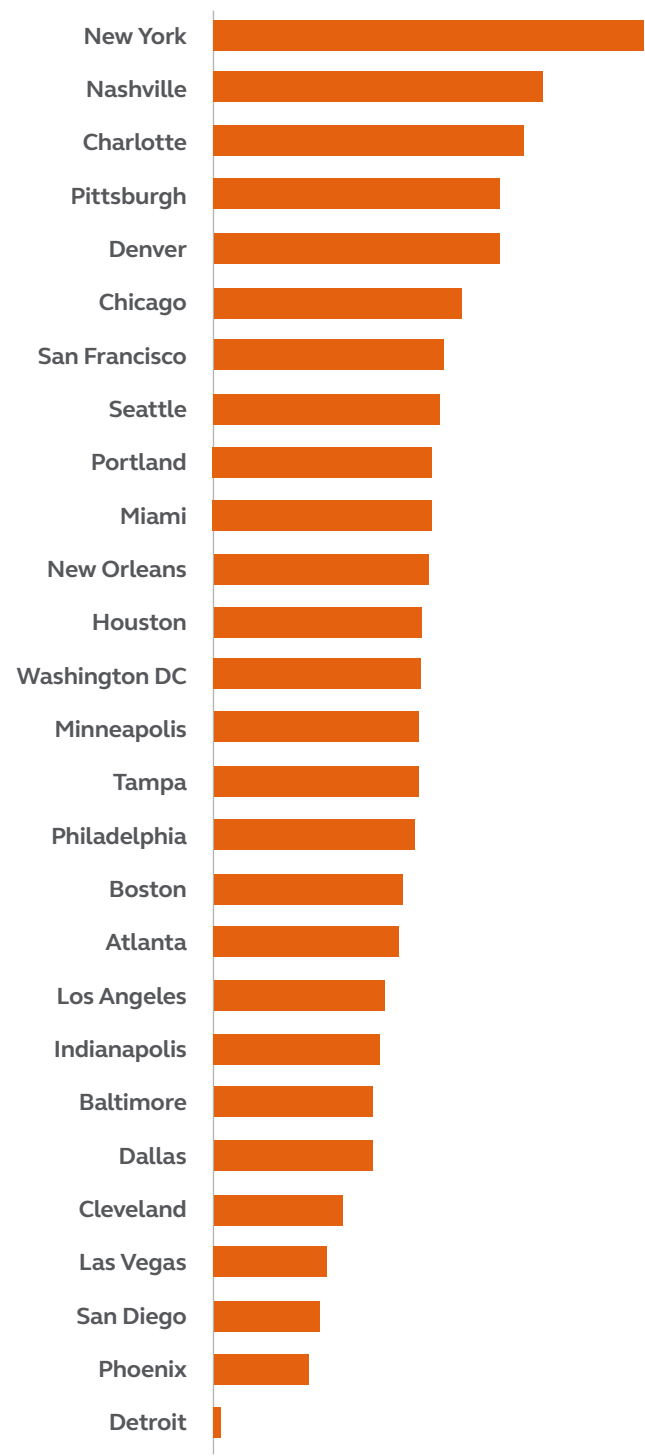
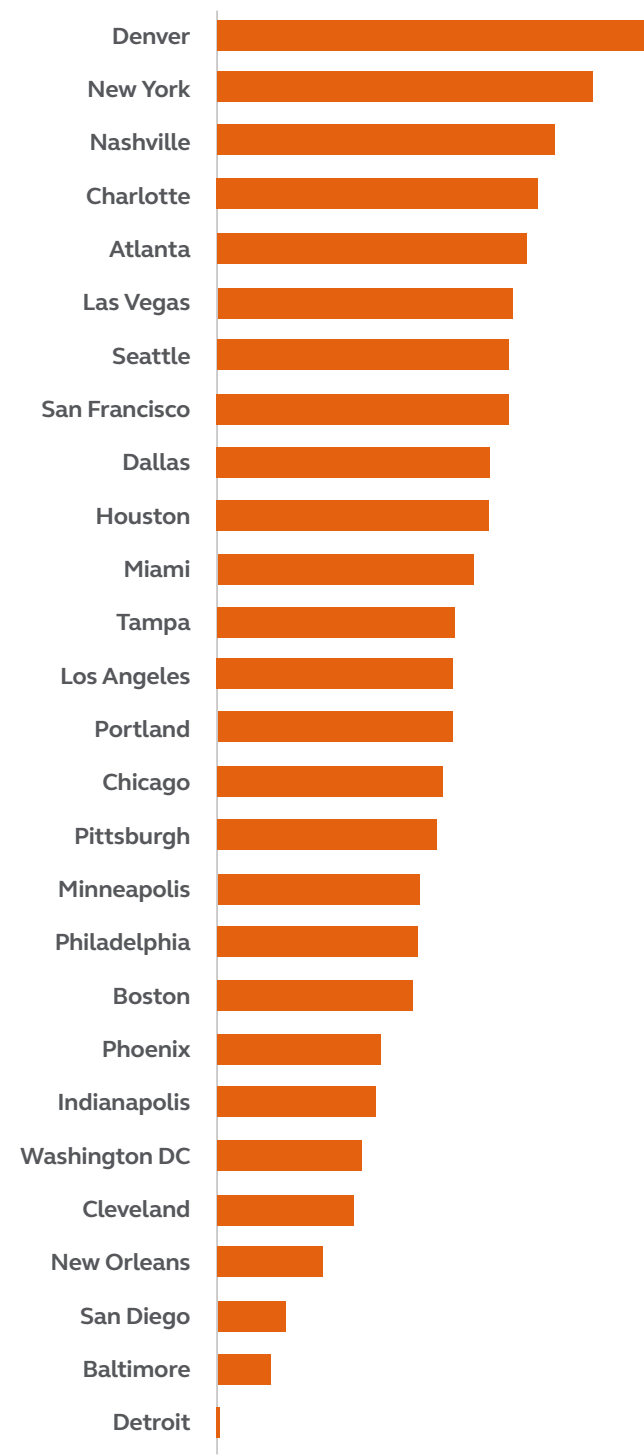


Figure 7: Residential Development Restoration Sweet Spot Index (2015)



downturn, but Baltimore and Phoenix also score lower. Arizona’s slow recovery from the great downturn has clearly weighed down on the growth of Phoenix. The implication for industrial land owners and planners in these cities is that it will be much harder to turn the dial on restoration, with less development activity taking place to create a critical, sustainable mass.

The strongest and weakest locations based on the ULRI using full remediation costs highlights the top and bottom cities, with New York, Denver and Charlotte standing out as consistent investment opportunity sweet spots.

Figure 8: Top 5 City Restoration Sweet Spot Index (2015)

COMMERCIAL SWEET SPOT RANKING	RESIDENTIAL SWEET SPOT RANKING	INDUSTRIAL SWEET SPOT RANKING
New York	Denver	New York
Nashville	New York	Denver
Charlotte	Nashville	Charlotte
Pittsburgh	Charlotte	Chicago
Denver	Atlanta	Los Angeles

Figure 9: Bottom 5 City Restoration Sweet Spot Index (2015)

COMMERCIAL WEAK SPOT RANKING	RESIDENTIAL WEAK SPOT RANKING	INDUSTRIAL WEAK SPOT RANKING
Cleveland	Cleveland	New Orleans
Las Vegas	New Orleans	Baltimore
San Diego	San Diego	San Diego
Phoenix	Baltimore	Phoenix
Detroit	Detroit	Detroit

DOWNBEAT TO DOWNTOWN TRANSFORMATION



FORMER SITE OF ONE OF NORTH AMERICA'S LARGEST INDOOR MALLS

TRANSFORMED INTO A REVITALIZED URBAN COMMUNITY FOR 150,000 RESIDENTS

HIGHLY SUSTAINABLE DEVELOPMENT SOLD TO PRIVATE DEVELOPER FOR NEARLY \$300M



Considered the downtown of Lakewood, Colorado, a suburb of Denver with approximately 150,000 residents, the Belmar Urban Center is one of the most successful greyfield redevelopment and brownfield remediation to-date, and a model for mixed-use development.

Belmar replaced the Villa Italia Mall, once recognized as the largest indoor mall between Chicago and the U.S. West Coast, while serving as an economic and cultural center for the city of Lakewood. In the 1990's a decline of the mall began and with its continued deterioration came similar adverse impacts to the surrounding community. City leaders recognized the need for redevelopment of the centrally-located, 100-acre site to achieve civic and economic goals; however, environmental impacts represented a barrier to moving the crucial project forward.

Previous operations left behind an environmental legacy that had to be safely and effectively managed in order to resuscitate the site, delivering a once again vibrant resource for the community.

Arcadis partnered with developers to transform the property into a revitalized urban community, while maximizing the value of the land through smart mixed-use development.

Environmental restoration was a critical first step to enable the \$560M redevelopment project. Arcadis delivered an innovative solution to address environmental impacts, leveraging a best-in-class technical solution coupled with a financial delivery model that used a public-private partnership to secure the funds necessary for the \$5M cleanup. The overall funding scheme included a brownfield grant from the city, cost-sharing with former property owners and developers, and a loan from the U.S. Environmental Protection Agency (EPA).

With restoration complete, Belmar began to take shape as 22 city blocks were transformed into retail space with shops and restaurants, office space, public parking, residential units housing more than 2,000 residents, educational institutions, as well as public plazas, art, and green space.

MIXED-USE SUSTAINABLE URBANIZATION

Today, the redevelopment has increased community property values, adding more than 12,000 jobs, \$17m in annual tax revenue and \$200m in annual retail sales. Testimony to the success of the redevelopment, Belmar was sold in 2015 to a private developer for close to \$300m.

Belmar was bestowed the coveted Phoenix Award for its environmental cleanup significance, an award recognizing the outstanding achievement and innovation relating to environmental and community issues. Belmar continues to grow with a light rail line recently added to Denver and a vibrant pedestrian-oriented city center and economic engine to the City of Lakewood.





FOR THE INDUSTRIAL PROPERTY OWNER

For industrial land owners, the continuing demand for 'developable' properties in city centers is creating a significant opportunity to manage and divest underutilized properties in both mature cities, such as Los Angeles and New York, and emerging cities, such as Nashville and Denver. The result is not only a financially sound real estate strategy, but an opportunity to transform historical environmental liabilities into positive future legacies.



FOR THE DEVELOPER

For developers and investors, the opportunity is to secure available properties that are not only prime for redevelopment, but also represent a significant return on investment with smart restoration strategies. By coupling restoration and redevelopment, savvy developers and investors can capitalize on untapped markets that exist in cities across the United States, while further enabling sustainable growth.



FOR THE CITY LEADERS AND PLANNERS

For cities, restoration and redevelopment of underutilized properties can serve as an engine to drive positive change, creating thriving neighborhoods, generating sustainable economic growth and driving competitive advantage as Americans seek out the best places to live, work, and play. For city leaders who seek to compete effectively for resources and talent, the streamlining of programs that enable restoration and redevelopment, such as brownfields restoration, can serve as an enabler to attract investment and achieve sustainable development.

CONCLUSION

HARNESSING THE VALUE OF INDUSTRIAL SURPLUS PROPERTY FOR URBAN TRANSFORMATION

The continuing trend of migration back to urban centers creates both a challenge for city leaders as well as an opportunity for investors and land owners. City leaders face the need to create places of distinction that will compete with other cities to attract and retain residents and businesses. Industrial land owners collectively hold a substantial inventory of surplus properties necessary to enable cities' sustainable growth. The synergy between these challenges and opportunities can be addressed through a common outcome - transformation of underutilized properties in cities.

The successful growth of United States' cities is hinged upon many factors, but at the heart of the issue is the availability of 'developable' properties that are critical to not only sustaining a cities' growth, but also transforming them into

desirable destinations for residents and visitors alike. The Arcadis ULRI provides unique insights into market conditions and opportunities that truly represent the nexus where cities, investors, and industrial land owners can collaborate to create rejuvenated urban landscapes that leave a lasting, sustainable heritage.

Industrial land holders have a significant opportunity at the point where restoration and redevelopment converge, creating a mechanism to unlock the greatest value from distressed surplus properties. Undoubtedly there are inherent challenges and uncertainties associated with the transformation of environmentally impaired properties. The critical path to success is effective site restoration, while achieving cost, schedule, and performance certainty.

The optimal approach to restoration and redevelopment is to integrate these strategies early in the process, maximizing the opportunities to manage site use with the level of remediation in the short-term or the long-term management of environmental conditions via controls. By doing so, risks are most effectively managed while cost efficiencies can be recognized.

Arcadis brings 150 years of experience in environmental restoration, urban planning and development and resiliency, with a proven track record of bringing private, public, and investment communities together to deliver successful remediation and redevelopment programs.

Our approach to managing Surplus Property encompasses the entire life cycle of a property: from remedial design, cleanup, and reuse

planning to property divestment. We advocate a coordinated effort that integrates community outreach and engagement with upfront master planning that supports specific environmental restoration, including decommissioning and demolition of facilities. Additionally, we have developer partners and private equity relationships that can further add investment aimed at enhancing the property value and marketability of specific projects. With such an approach to life cycle planning of corporate-owned surplus property, the fundamental elements of redevelopment are firmly in place to provide a greater chance of community and political support that ultimately translates into stakeholder support and action - which is to incorporate the vacant industrial sites and blighted properties of our communities back into the fabric of our neighborhoods.

A BRIGHT NEW FUTURE FOR ABANDONED STEEL WORKS



**DECADES OF INDUSTRIAL USE
STRETCHING BACK TO 1875 CLEANED
UP AND REDEVELOPED**

**NOW SITE OF SUPPORT FACILITIES
FOR LOCAL PETROLEUM INDUSTRY**

**NEW BUSINESSES ATTRACTED TO
AREA CREATING JOBS FOR LOCALS
ONCE AGAIN**



When the once-mighty Wisconsin Steel Works facility in southeast Chicago closed down, thousands of local jobs were lost and this vast property in the heart of the community was left idle. Loss of this critical business was having a huge impact on the local economy and the vibrancy of the surrounding neighborhood. The community felt abandoned and angered at a situation not of their making. During the following years, environmental testing revealed that the land was contaminated, thus creating a barrier for redevelopment. Navistar, the former owner of the steel mill, took ownership of the legacy and proactively orchestrated a comprehensive cleanup of the property.

In tackling remediation head on, Navistar made a serious commitment to both public health and the environment. In order to deliver on their commitments, Navistar entrusted Arcadis to restore the property and achieve regulatory closure, setting a high standard of cleanup and accountability to the community and all key stakeholders. The final remedy tailored to the

end use, rendering the site safe for commercial or industrial redevelopment. Arcadis realized the extent of the problem: steelmaking and heavy equipment manufacturing since 1875 had left the area contaminated with heavy metals, toxic chemicals, and 70,000 cubic yards of slag from an on-site coke plant. The extent of the contamination would require many years of extensive remediation to meet the high standards set. However, years of waiting left the public mistrustful and unhappy about an extended timeframe before the property could be restored to commercial use for local business and jobs.

CLEANING UP, PIECE BY PIECE

Delivering restored land back to the community was a top priority, therefore, Arcadis collaborated with the stakeholders to systematically remediate the less contaminated parcels of land in order to achieve regulatory approval and release segments of the property for development. As parcels were remediated and sold off, they were developed and new, local businesses emerged. As work continued, trust

was built and the community saw real results, reinforcing the commitment to restore this land to a beneficial reuse for the community.

After years of diligent efforts and coordinated restoration and redevelopment, the entire property was transformed for the community to attract and develop new business. Today, a facility that serves the regional petroleum industry occupies a portion of the site, providing jobs and returning the property to a valuable community asset. The remediation transformed the area on the verge of virtual desertion into a once-again productive site and a neighborhood on the rise.



APPENDIX

Data has been taken from a range of open access sources set out below. All data is normalized to a range of 0 to 100, which enables the combination of data, absolute and relative, into a single composite weighted index. Separate indices have been prepared to compare the commercial, residential and industrial market dynamics of the target cities.

INDICATORS

REMEDICATION

Unrestricted Remediation Cost

Restricted Remediation Cost

RESIDENTIAL/INDUSTRIAL DEMAND

Office Vacancy Rate % (Q4 2015)

House Price Annual Growth % (2013-2015)

Industrial Vacancy Rate % (Q4 2015)

CITY DYNAMISM

Cost of Business (Ranking, source: Forbes)

Jobs Growth (Ranking, source: Forbes)

Education of the labor force (Ranking, source: Forbes)

Economic Environment Rank (Ranking, source: Wallet Hub)

City population size (2014)

Total wages generated (\$) (2014)

GDP by metropolitan area (\$) (2014)

SOURCES

WE ACKNOWLEDGE THE FOLLOWING DATA SOURCES:

CBRE

U.S. Federal Housing Finance Agency

Forbes

Wallet Hub

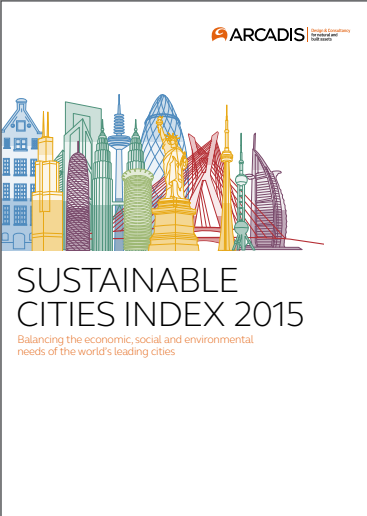
U.S. Department of Commerce (U.S. Census Bureau)

U.S. Department of Commerce (Bureau of Economic Analysis)

U.S. Department of Labor (Bureau of Labor Statistics)

FURTHER READING

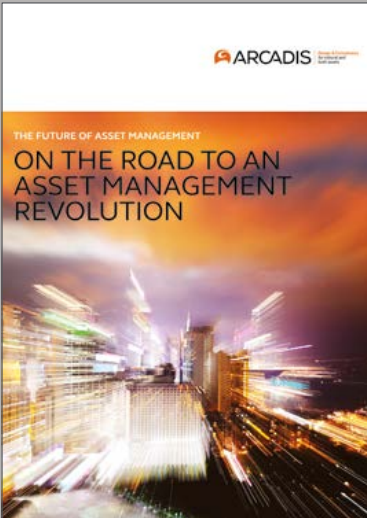
SUSTAINABLE CITIES INDEX 2015



INTERNATIONAL CONSTRUCTION COSTS 2016



THE FUTURE OF ASSET MANAGEMENT 2016



BUILT ASSET WEALTH INDEX 2015



GLOSSARY

Brownfield - A former industrial or commercial site that is affected by real or perceived environmental contamination and then abandoned.

City Dynamism - An Arcadis index used to compare the development potential of cities on a consistent basis. City Dynamism takes into account the current state of real estate markets, the inherent strength of cities based on population and GDP per capita and measures of city vigor, including the cost of doing business and the quality of the workforce.

Contaminated Land - Land carrying environmental liabilities, typically associated with past activities such as industrial processes, materials handling, operations and practices.

Conveyance - The process of transferring ownership of real property from one party to another; there are several instruments and methods that buyer/sellers use to affect the conveyance of real property.

Deactivation - The process of rendering something (assets, equipment, etc.) inoperative and removing it from service, including disconnection from power and associated utilities.

Decommissioning - The process of making an asset (e.g., buildings, equipment, industrial processes) inoperative, and dismantling and decontaminating it to make it safe.

Divestment - To sell an asset, whether it be an operating, non-operating asset or vacant surplus property.

Environmental Cleanup - See "remediation".

Environmentally Distressed - Land or assets impacted with environmental contamination.

GDP - Gross Domestic Product

Guaranteed, fixed-price remediation - A commercial (or contracting) approach where remediation is performed to an established cleanup goal or endpoint for a guaranteed cost.

Land Restoration - The process of cleaning up (remediating) land to a beneficial end use.

Natural Capital - The stock of renewable and non-renewable natural resources (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people.

Property Transfer - A term to generically describe the conveyance of real property to a new owner.

Red-line business - A business that by definition represents a bottom line cost to an organization or institution, making it a net outflow of spend.

Regeneration - Renewal or restoration of an asset, community, or urban environment.

Remedial Spend - The annual or lifecycle investment in environmental remediation programs.

Remediation - The action of reversing or stopping environmental damage (e.g., mitigation and treatment of environmental contamination).

Restricted redevelopment - The result of an owner or seller placing use-related restrictions on a property, i.e. what the property can be used for, where and what improvements can be built on or within the subsurface of the property, that inhibits the future reuse of that property. Such restrictions are typically intended to preserve closed remedial actions from being disturbed by future unrestricted redevelopment and/or protect the seller from future claims arising from site development.

Re-urbanization - The movement of people back into an area that has previously suffered economic and social decline. Re-urbanization can be a government's initiative to counter the problem of inner city decline. One of the consequences of re-urbanization may be a change to the social make-up of an area, often associated with gentrification.

Reuse - Commonly used by owners and developers to describe a property's next use.

Risk-based Remediation - Remediation of land that is tailored to an exposure threshold for human health and the environment, and is based on the potential for short-term and long-term adverse impacts associated with contaminants.

Surplus Property - Real property that is currently not being utilized or no longer core to the owner's business. The property may be redundant, a former operating facility scheduled for decommissioning, partially vacant land with buildings and/or infrastructure remaining on it, or vacant.

Sweet Spot - The term used in this report to describe a city which combines a high score for city dynamism with relatively low cleanup costs.

Triage of Sites -The process that portfolio managers or buyers of property portfolios undergo to categorize and characterize various types of real property, prior to investment in a detailed financial evaluation.

Urbanization - The process where an increasing percentage of a population lives in cities and suburbs.

Value-Add Divestment - A specific approach to divesting property, typically underutilized and has the potential to capture a higher market value through reuse planning to change the current zoning to a different zoning that possesses a higher value.

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