

# Do as I do

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## Abstract

The Brownfields program has often served as a laboratory for technology and process innovation. It must again provide that leadership in getting sites redeveloped in a sustainable fashion. Most developer objections to sustainable design center on cost. They assert that green design requires an initial increased capital outlay with no or inadequate subsequent tax recovery. They also say that government processes create time and technical burdens that weigh against efficiency. This paper will assert the premise that government can and must lead by example in sustainable development especially in the reuse of Brownfields sites. There will be a discussion of streamlining the permitting processes and also funding and returns on investment for the public. This paper will also suggest ways that the sites can serve as living classrooms for the public to visually understand the critical importance of sustainable practices to our planet. Only government projects can be expected to illustrate what needs to be done. We have the opportunity and duty to re-make the worst Brownfield sites into the most sensitive and feasible places. We must not be satisfied with just increased taxes and jobs. With the leverage of public funds for infrastructure, tax credits and grants, we can demonstrate that sustainable development must be a drummer we all march to as soon as possible.

*Keywords:* Brownfields, sustainable practices, taxes, permitting process, funding, return on investment.

## 1 The Brownfields legacy

World markets can be described as being about under developed, developing, and developed economies. The relationship among these markets is always in flux. The conflict over resources and strategies results in winners and losers not unlike the subsuming and dominance of tectonic plates. Brownfields are by-products of these shifting economic relationships. Sites became no longer useful



due to technological inefficiency or obsolescence, expense of cleanup, management error, labour costs or other reasons. Meanwhile, world population is increasing, resources are finite and competition can only intensify. The ingenuity of people may provide technological surprises that extend material options so that some aspects of life stay stable or improve for longer than currently foreseen. However, it seems that there must be a tipping point ahead where we have too many people consuming too many resources and despoiling the natural state, which causes an irreversible ecological decline. There are those that think that we have already reached that point.

Governments ostensibly strive to provide better living conditions for their citizens. But Brownfields don't better lives. They are representatives of a failed state. For a long time, they were discarded assets. Sometimes they were net liabilities. Yet they were once valuable. Some have been rejuvenated. Developers come to the pheromone of location. The infrastructure may even be adequate to support reuse. In some communities, the low hanging fruit is gone but the complex issues that beset the worst of the Brownfields remain. The economic battle among governments does not have a zero sum result. The land, air, waters and bio systems are under siege. This paper will discuss how Brownfields redevelopment can serve as an expression of conscience, technology and hope in the life sustaining commerce with our planet's resources. Government can show everyone how to "Do As I Do."

## **2 On addressing objections to sustainable practices**

Sustainable practices are touted as quintessential to the future quality of life on the planet. Actually they appear to be critical to institute immediately. Such practices are diverse in their potential application. There are recycled and recyclable building materials. There are well-understood passive and efficient utility systems. There are land use density approaches that conserve open space. However, these technologies and practices are rarely deployed. There are many reasons why this is so. Foremost among them is the argument of cost. A reason often cited for the increased cost is the self-destructive effect of Draconian and retrograde regulations. It is easier not to build green buildings. In most venues it is harder. The materials are not in the mainstream of the industry and so cost more. The construction industry wants to stay with what it understands and can deliver efficiently and competitively. Business as usual is not unique in history. What is unique is the strain on the planet that supports our lives. Therefore sustainable practices must become the new "business as usual". Brownfields in developed countries could play an important role in illustrating how sustainable practices can be part of the economically feasible future of the planet.

Brownfields reuse should be the centerpiece of an extraordinary and urgent effort to accomplish a universal embrace of sustainable practices. We cannot wait until the debate over the tipping point is settled by a catastrophic reality. This is the time in which we have to relearn the approach to development with ecologically appropriate cost-effective solutions. The challenge for government is to behave as an entrepreneurial advocate for management practices that will



sustain the ecosystem. Government and entrepreneurship may be disharmonious bedfellows or a non sequitur. It is rarely behaved so in the past and is rarely doing so now. Sprawl, highways, increasing petroleum consumption and the attendant ills are still manifestations of the developed countries economic policy. The attendant jobs, return on investments and perceived well being mean that it is politically difficult or impossible to rein in these forces of high consumption. Some people and large voting blocs believe that this “good life” is their right. Is it possible for these nations to do what must be done to bring about the required change? A test case and proving ground could be in their reuse of Brownfields.

### **3 On the extra cost of being green**

Is it really inherently more costly to be green? Is there an underlying economic problem with sustainable practices? Whether there is or not, the perception is that there is. It can cost a site owner more to set up a grey water retrieval system than the traditional shipping of the wastewater to a treatment plant via sewer lines. However, what of the cost to society? What are the costs to expand sewer treatment plant capacity? What is the cost to pipe in and treat drinking water from great distances because the ground has been paved and cannot accept the recharge of rainwater? And what is the cost for that drinking water because of the tolerance of non-point source pollution, which continues to degrade the environment? What is the cost to the estuaries that incubate marine life when the hydrocarbon wastes pour into them? Where will life sustain itself if development continues as it has? Our governing management principles are remarkably short sighted. It is the return on investment today that seems to count most. There is an aggression toward the planet and planners. Everyone in every nation can be reduced to wanting his or her due at some time. We all want to eat. We all want shelter. We all need income to accomplish those simple basis activities. But the planet is in agony. What about the future of our species – of all species? What does it take to be greener? Certainly scale of production efficiencies is a key component as are technical advances and construction methods. But there are obstacles to implementing these best management practices that come from the very people who are the guardians of the public trust. Building codes, zoning regulations, land management practices, tax codes and public funding usually combine to overwhelm green construction projects. Yet all these components of the problem can be modified to achieve sustainable ends with relatively little difficulty. We aren’t searching for or waiting on a startling new discovery to institute radical change. There only has to be a revolution in practice – not technology.

We can put in swales along side roadways instead of curbs and storm sewer lines. We can plant rain gardens instead of riprap-lined pits. We can sink parking lot planters to absorb and breakdown vehicle hydrocarbon runoff rather than piping it away. (It never really goes away – just somewhere else.) We can have green roofs to provide avian habitat and human quiet spaces instead of reflecting heat skyward. We can use less land by clustering structures and



harmonizing uses. We can use less energy by shaping more livable and accessible communities. There is of course much literature about new urbanism. But the focus here is on Brownfields. This is about the planned reuse of space that was previously degraded. The goal here is to show how some of the darkest places on Earth can become some of the brightest. It does not have to cost more to accomplish this. We need to accept the challenge to prove that this is so. We have to lift the weight of previous discouraging experience when a developer wanted to be green.

The largest developer in the world is the world's governments. Governments build post offices and schools, vehicle maintenance facilities, military installations, tax collection and processing centers, homeless shelters, veteran's hospitals, orphanages and housing. They build highways and waste treatment plants and airports. All these facilities generate waste and non-point source pollution. If the governments of the world are indeed the largest developer then they may also be the greatest consumers of energy and the greatest polluter. If there is a company that somehow exceeds the output of governments, then the governments cannot be far behind. Today nations are committing to more of the same. They are issuing permits for discharges and parking lots and myriad uses that will continue to degrade the planet.

Therefore the change that could be accomplished by a change in development practices by governments wouldn't be incremental – it would be monumental. There are contaminated areas in every nation. These sites could be demonstration projects for adaptive reuse with economically rational parameters.

#### **4 How should we proceed?**

First we could determine what the sites are that are already owned by government. Almost universally there are public works garages, military bases, old office buildings and old public housing facilities almost universally. There are undoubtedly projects proposed for new construction in some of those areas. There could be a simple requirement to not allow the use of green space for any new government construction before an equivalent Brownfields site was evaluated. The vanity of having a new building sitting in a former field would have to be replaced by the demonstration of conscience and best management practices. So a space match to a Brownfields inventory would have to be made. We could then leave a little more room for goldfinches, voles and larkspur.

Then there would need to be a more refined discussion of the site and its liabilities. Perhaps the nature of the contamination would be prohibitive to address within the period required for construction. But perhaps that thinking would be based on assumed remedial practices. Perhaps the approach could accommodate remediation over term because the client doesn't have to defend an archaic concept of a glossy corporate image. A land farming installation or ground water treatment installation would be part of the message as well as the mission. Maybe a berm of isolated materials provides a screen for activity that the neighbors would appreciate not seeing, like parked vehicles. Certainly an



unspoiled area would stay that way instead of receiving contaminated soil from somewhere else.

So first we need to have national inventories of sites. Perhaps this will also lead to consolidation of facilities. Perhaps this will also lead to increased awareness of the disharmony between adjacent land uses in communities due to the artificial construct of zoning practices. Governments could put schools and clinics on sites that have existing access to and can therefore utilize public transportation to reduce fuel consumption. These sites don't have to have the stigma of the past disregard. They can have the high reputation that comes from the commitment to conservation, reclamation and revitalization.

## 5 On remediation and education

People are afraid of the suspected health hazards on Brownfields sites. The poster child image is one of decaying facilities and rusted, dented drums and insidious practices that led to terrible risk. Right from the start, the community needs to know what the process is that will define the remediation. They need to know what will be looked for, where it will be sought and why. The assumption must be that there is distrust and worry. The actions must be transparent and clear. Therefore the first investment must be in educational materials and events. Perhaps these need to be multi-lingual too.

The standard practice of a Phase I study in the US has clarified what needs to be known at the outset. People as well as financial institutions need clarity of process and outcome. There is little room for error, for missing something significant such as previous use. There should be prior notice when site sampling is scheduled.

The ethos of remedial approach needs patient explanation too. If there is to be in situ remediation there needs to be clear and complete safeguards during the cleanup and afterward in the maintenance of institutional controls. There have to be continuing reports of what is being monitored and what concerns may emerge over time. Science, even the best science, is practiced by human beings who can make errors in the ordinary course of assessment and remediation. Nothing can be hidden. The selection of a treatment technology should be explained in an open dialogue.

If for example, a sparging system is selected, there could be public events for schools or interested parties when the system is maintained and when sampling is performed. Checking on ambient air quality can be an interesting and trust building exercise. Progress toward compliance with regulatory levels can be charted and disseminated. Each aspect of assessment and remediation can be a case study at every level of school.

The public will have an understanding of the nature of the costs to assess and remediate using public funds for public places. It will be possible to develop financial models that will illustrate the long return on investment required on some sites. The restoration of a site, the management of health risk and the elimination of blight have value that can be discussed and established.



## 6 Reused sites as demonstration projects

The site may be an example of risk based clean up management. Some remediation can take place during site preparation. People will see that it is not necessary to clean one place but despoil another. The use of isolating membranes, impervious materials and the installation of controls can all be made a part of the demonstration of best management techniques. What better location for long term institutional controls than as a part of the institution? There would not have to be the same concern about the loss of land records. The need to heal the planet would be visible and attended to in the public realm. Everyone uses the public buildings so the fears of perpetration of environmental injustice would be assuaged.

The building could be made of recycled materials. The site might provide some of them in reprocessed asphalt and demolition materials. The public could see the testing of the materials for lead and other common substances to establish that there is no risk associated with the reuse. This would be a good arena to explore the management on site of moving geotechnically unsuitable materials to areas of no concern. Public policy may be developed out of the understanding that this can be an issue on filled lands. Many urban sites are next to rivers and shorelines were filled with ash and slag that is unstable for significant weights. Site preparation costs such as these can cause delay and scuttling of a project if the burden is too great. The public can be exposed to the understanding that some soil issues may be more costly to resolve than contamination.

Government could declare that no materials will be used on site that necessitated the use of non-degradable toxic substances in their manufacture. There could also be the search of a database to insure that the manufacturer is not in violation of environmental regulations at any of their facilities. The good practices could extend to origins off site too. If this seems extreme, consider trying to defend the use of materials that are not recyclable and that are harmful to the environment. In the context of the planet it does not matter who makes the things; it is still a problem for all of us.

## 7 Sustainable building practices

The sites could also be models for experimental techniques. For example, the importance of low impact development in water management could have a multitude of demonstration aspects. Volunteers could be encouraged to maintain and plant in rain gardens. What a wonderful involvement that would be in bringing people to a public center to contribute to the maintenance of beauty. People could be told about the reduction in the need for their tax dollars because the storm sewer line did not have to be expanded to support the new municipal facility. Sites could be considered for reuses that have no storm sewer lines on them. The swale system and ponds could support other species to enhance the enjoyment and knowledge of all. The colors could be inspiring. There could be a new basis for respect for the leadership provided by the public sector.



Every aspect of zoning and building permits that private projects have to go through could be part of the review on the municipal building. Compliance requires steps that create time burden and expense. There could be an analysis of what are the obstacles to utilizing green practice. There could be discussion of how the site contributes to topics as diverse as aquifer recharge and reflective heat not generated. Porous pavers could be used on all walks and on overflow parking areas. The oil saved by not paving could be calculated. These phases of review and discussion will increase public awareness of what their “God’s little acre” may be doing to the adjacent acres. The public could learn about many aspects relating to water technology, erosion control, dilution factors and attenuation and the links of the site to a water body and to the larger water body and downstream ecosystems would show the global nature of all acts.

Incorporating adaptive reuse into the original design can effectively reduce the need for future bonding by anticipating another use at the outset. Maximizing passive solar gain and alternative energy generation could be included. The use of overhangs and insulated panels will show that it is not difficult to employ these measures. The energy and waste systems could be built out incrementally as needed to minimize the upfront cost.

Maintenance of a healthy environment ought to be part of the best management practices. Non-toxic cleaning compounds and their relationship to respiratory stress reduction by utilizing non-toxic cleaning compounds. Devices measuring ambient air quality would explain the science to the public. There could be signs in the parking lot swales that explain the selection of the plants that enhance the degradation of hydrocarbons.

The maintenance of the green areas could be done without pesticides and herbicides. The site could be designed to incorporate as much open space as possible for habitat restoration, which would encourage nesting by birds that could use the “pests” as food. Hearing conservation measures could be part of the design and practice. There could be on going environmental audit demonstrations. These would reassure people about their work environment but would also be an explanation of what industry must do to cope with regulations. Best management practices do create cost but adherence to them reduces long term expense, which should be explained on site.

## **8 A light for tomorrow**

Some of the sites may render themselves useful as showcases for emerging technologies. For example a site with heavy asbestos issues could become a demonstration site for conversion into a recyclable product instead of the bane of off site disposal. The use of bio-remedial techniques to reduce contamination would encourage further exploration of this important alternative technology. Some of the expense could be off set by having the sites serve as living classrooms so that students could provide some of the labor and teachers some of the scientific management.

There could be a study of what the net effect of investment incentives are when it comes to sustainable development. Should the public pay for the



assessment of abandoned sites if the long term gain is in taxes and jobs? There can be repeated case studies of the performance of the initial public leverage of assessment and discounted land was in the revitalization process. Green development could receive upfront tax breaks to level the field with those sites not practicing green tenets. There could be a regressive tax similar to the luxury tax on fuel inefficient vehicles. That additional cost would be immediately understood and felt. Projects all across the globe would quickly explain the logic and necessity of doing things differently.

Eventually it may be possible to require the suppliers to governments to institute green practices in their facilities if they want to qualify for government business. Energy costs savings could allow other benefits to be sustained longer despite the continuing effect of inflation. There would be significant savings from capital subsidies and charitable contributions for heat that could be redirected to health or other needs. This would be doing more with the same amount and could forestall some tax increases.

The Brownfields across the world already have the attention emanating from blight and fear. They could have the power of hope and light the way to more sustainable practices while there is still time.

