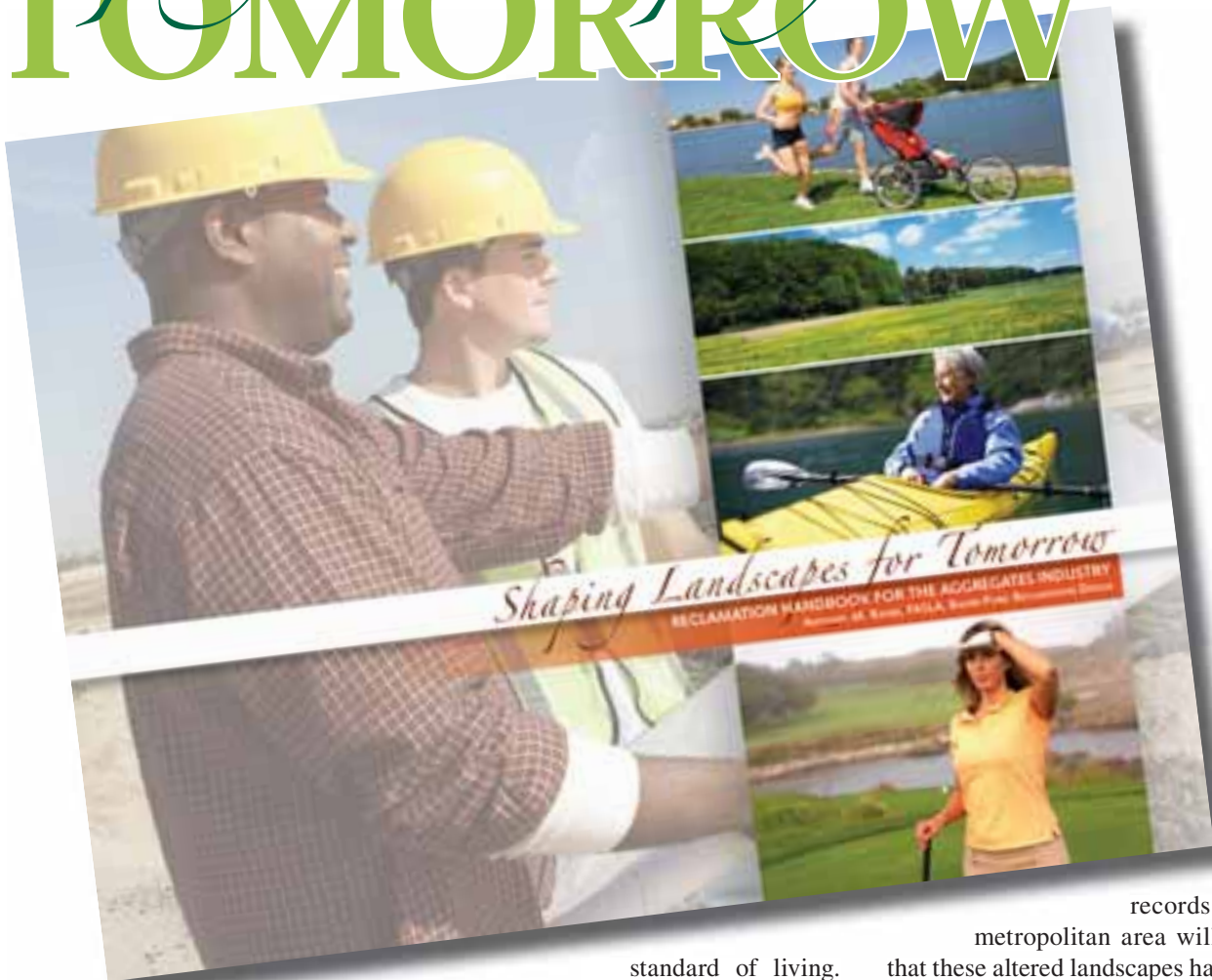


Shaping Landscapes for TOMORROW



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*The following is an excerpt from NSSGA's publication **Shaping Landscapes for Tomorrow**.*

The aggregates mining industry has gone through dramatic changes over the last five decades. Originally, mine sites were small and generally located in rural areas. Few rules regulated the industry. Over time, larger mine sites have been developed in response to an increasing need for aggregate products to meet a growing population's desire for a higher

standard of living. Populations spilled into the countryside. More people surrounded pits and quarries. This, in turn, stimulated an increase in land use and environmental regulations. Today, aggregates mining operations are within close proximity to many neighbors. They also operate under a labyrinth of local, state and federal regulations. Conformance to reclamation and environmental standards is now an integral part of any aggregates mining operation.

During the last 50 years — contrary to a popular belief that mined-out sites were wastelands — numerous pits and quarries were converted into functional, attractive and valuable end uses. A review of historical maps and

records of any metropolitan area will reveal that these altered landscapes have been woven into the fabric of the community as high quality housing sites, parks, school grounds, wildlife habitats and any imaginable urban land use. Few mining companies, however, benefited from this conversion, because after mining was completed most sites were turned over to institutions, individuals or developers with a new vision for the mined land.

But mining companies can create valuable land when end use development becomes an integral part of the mine planning and mine operation process. The most effective approach in *Shaping Landscapes for Tomorrow* is by planning the use of geologic features and mining processes today.

Expect results

**Are all quarry operations
created equal?**

Of course not.

Different terrain, climate conditions, environmental factors and people mean different problems. Metso has worked with aggregate suppliers in every corner of the globe, emerging with a century of experience and the local knowledge to help you succeed.

Partnering with Metso gives you the benefit of engineering expertise customized to meet your needs. You get the right equipment, built to produce the right products, and a higher return on your investment. You get all this, along with the uncompromising support of a trusted name.

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No use can be ruled out in the reclamation and development of mineral lands. The record of reclaimed pits and quarries across the United States and Canada covers all imaginable land uses. They include, for example:

- parks
- housing
- wetlands
- resorts
- arboretums
- industrial sites
- geologic study sites
- school grounds
- gardens
- wildlife habitats
- golf courses
- office parks
- amphitheaters
- beaches
- zoos
- agricultural lands

One fact stands out in an analysis of reclamation projects: reclamation standards alone do not contribute entirely to the success of the project. When followed to the letter of the law, most reclamation standards inhibit creative reclamation practices. The purposes of these laws are to set minimum standards to stabilize a mined landscape rather than to be responsive to the distinct qualities of the geology or the particular type of mining operation. This is not to suggest these regulations are inappropriate. Rather, it suggests that mine operators should think about long term earth handling strategies at the very start of the mining process if they expect to maximize the end use potential and, therefore, the value of their sites.

Some of the successful reclamation projects noted here represent a mere fraction of the total number of reclaimed pit and quarry sites. Historical documents from any metropolitan development will uncover numerous examples of mine sites that have been converted into every imaginable urban land use. In most cases, it is difficult to identify these sites as reclaimed lands without some form of historical record.

The character of each site is a reflection of the geology from which the reclaimed site was formed, and the nature of the mine operation that shaped the site. Some sites have been reclaimed as an integral part of the mining operation. Many were devel-



The rare Lakeside Daisy is currently known to exist at only two natural sites in the United States: Lafarge's Marblehead Quarry in Marblehead, Ohio, and in Mackinac County, Mich.

oped after mining was completed and a few were reclaimed by a combination of natural re-vegetation and selectively planned development. Private developers, public and private agencies and institutions, individuals and a variety of special interests groups as well as mining companies participated in this process. Several involved unique partnerships between mining companies and individuals and organizations such as park departments, wildlife agencies, private developers and farmers. They illustrate that the rich and diverse landscape qualities created by mining operations when properly reclaimed, can result in unique, attractive, productive and economically viable end uses.

The list of reclaimed mine sites around the United States and Canada includes all types of end use developments. They exist in every imaginable geological formation and mined land configuration. These former mine sites have been converted into attractive, productive and valuable lands and have become real assets to the communities and environments within which they are located.

There can be no doubt about the positive opportunities that exist in reclaiming mined-out land. But there are two issues related to these reclamation opportunities that the aggregate industry should address.

- The general public is unaware of these reclamation successes and has difficulty accepting the idea that mined-out land can become a real asset to the community.
- Few mining companies have been active participants in, and consequently significant beneficiaries of, the increased value that occurs in reclaimed and developed mine sites.

The *Shaping Landscapes for Tomorrow* publication is an attempt to highlight the land development opportunities that exist in mine sites. It also attempts to identify basic reclamation procedures an aggregate mining company can implement to increase the value of reclaimed land and to enhance its equity position in the end use development of the mined-out land.

Mining companies have the means to create valuable real estate as a natural and integral part of their mining operation. ■

Shaping Landscapes for Tomorrow highlights land development opportunities that exist in mine sites, and identifies basic reclamation procedures to increase value of reclaimed land and to enhance its equity position in the end use development. The publication is available at <https://www.nssga.org/commerce/store.cfm>.