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# New Dimensions in Reclamation: Indianapolis, Indiana

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# New Dimensions in Reclamation

Indianapolis, Indiana

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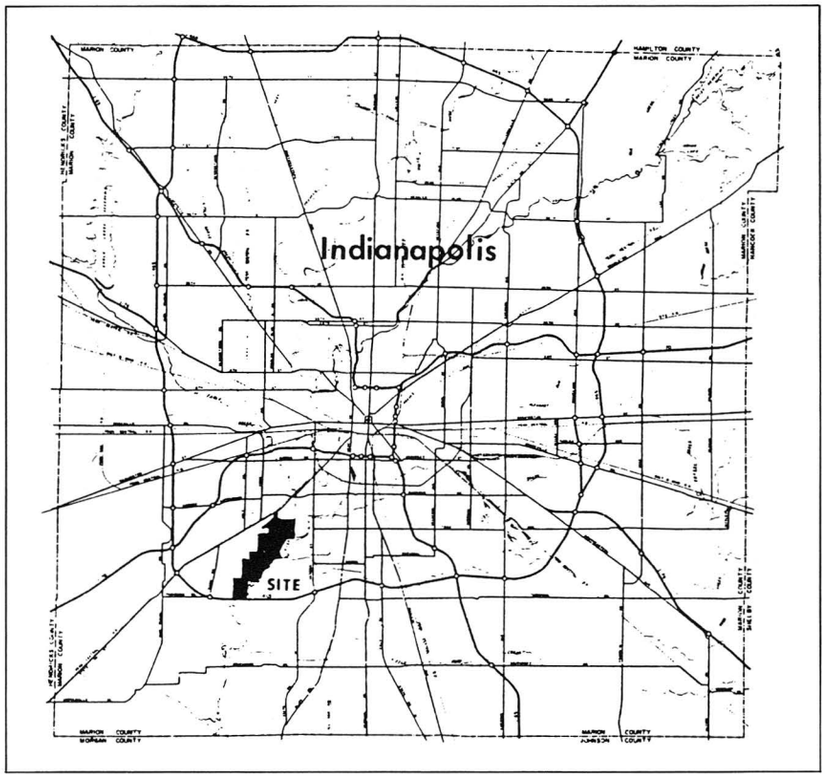
Continuous population increases are causing United States cities to grow much faster than their respective land areas will allow. As each city limit gradually expands, distinction between one city and another becomes unclear, thus creating a situation known as 'Interburbia' to occur. With an increasing desire to locate within the urban environment, the additional increase in population drastically effected central urban land prices, causing them to skyrocket. As a result, the reuse of unoccupied buildings within the central business district and vacant land immediate to the urban district, have become valuable, economic alternatives to increased outward expansion of the city, and unwarranted use of the natural environment. In the Central States Region alone, much of the expansion of cities is occuring at the expense of precious farmland. In efforts to reduce the loss of farmland and other undisturbed land, rehabilitation (reclamation) of derelict land adjacent to the central urban district is rapidly becoming a popular and cost effective alternative for a variety of development activities.

An annual student design competition provided a vehicle for Ted Spaid and Vance Rzepka to explore the opportunities of reclamation processes of just such derelict lands. The competition, sponsored by the National Crushed Stone Association, the National Sand and Gravel Association, and the American Society of Landscape Architects required entrants to develop a beautification and reclamation program for an active or a prospective mining operation. The competition allowed students to become familiar with the aggregate extraction industry, and research and develop skills in reclamation processes.

The project consisted of three phases as required by the competition guidelines — Phase One included a detailed analysis of the existing conditions of the site mining operations, soil properties, visual impacts, surrounding land uses, and a soil/plant response key; Phase Two proposed a plan for beautification of existing mining operations; and Phase Three introduced a plan for development of the mine site after operations were completed. In addition to the proposed plans, a cost estimate was completed for the beautification and revegetation of the mine site, and development of post-operational alternatives.

The Kentucky Avenue Mine, a crushed stone, sand and gravel mining operation, owned by the Martin Marietta Aggregate Corporation, was used as a case study for the competition. The mining operation is located approximately four miles southwest of the Indianapolis central business district and east of the Indianapolis International Airport. Interstate 465, the major interstate loop for the city,

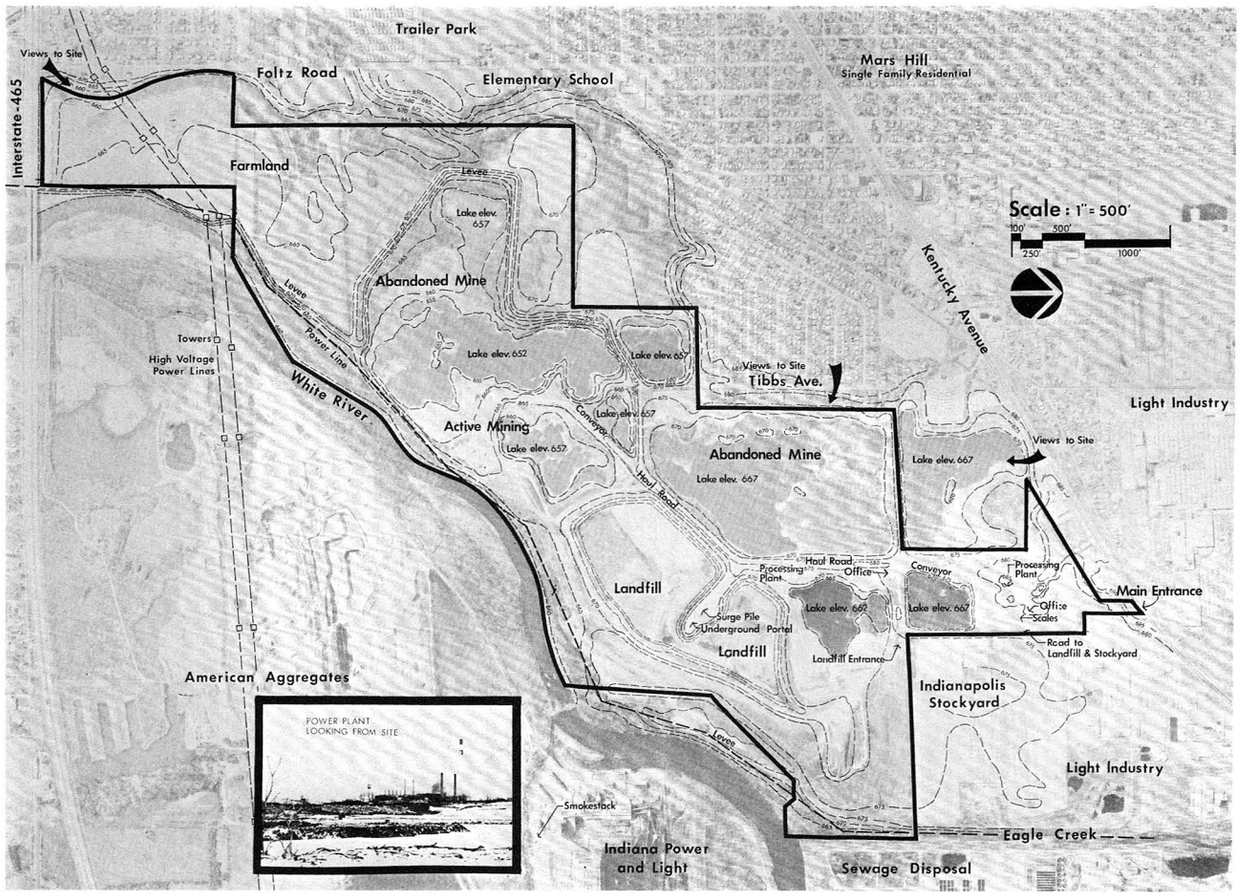



**Location Map**

borders the south side of the site. To the north is Kentucky Avenue (State Road 67) which is a primary artery radiating from the business district. The White River flows along the east side of the site, and two smaller residential streets border the west edge. Heavy industry and moderate to low income housing constitute the periphery of the site. There are presently several land uses which exist on the site, these include the following:

1) Abandoned sand and gravel operations.
2) Active sand and gravel extraction — covering approximately 77 acres.
3) A 240 acre landfill — this is the main landfill for the city.
4) Farmland which will become an active sand and gravel mine.
5) Below ground crushed stone mining operations which will eventually extract 350 acres of land.

Completion of the analysis phase of the project provided a better understanding of the possible alternatives for development on the site. Through studies of the various microclimates and information defin-




**Existing Mine Site**

ing the ecological and cultural systems inherent to the site, a method by which to develop a plan for beautification could be designed. Rehabilitation of the land to a productive state and a lessening of the cultural impact of the mining operations became two important goals in developing the plans. To accomplish this the site development was phased according to the duration of the mine life. Each phase is intended to stabilize and reclaim the soil to support vegetation, grade the land to a useable/aesthetic condition, revegetate, and relocate mining operations in an attempt to reduce the visual impact of the entire complex.

Additional efforts to improve public relations and to prepare the site for post-operational land use will include improvement of visual characteristics in three specific areas. These are the new plant site, the main entrance from Kentucky Avenue, and the underground mining entrance and plant site. Screening systems will be constructed to block poor views and to reduce the dust and noise associated with active mining operations. These systems will include new road alignment, median strip planting, berming, new signage, and extensive use of plant materials.

Upon completion of the earth movement and beautification phases, approximately 720 acres will have been reclaimed and an estimated 13 million tons of sand and gravel extracted from the site. At this time the processing plant will be dismantled and the final phase of reclamation may begin.

Final Reclamation/Land Development

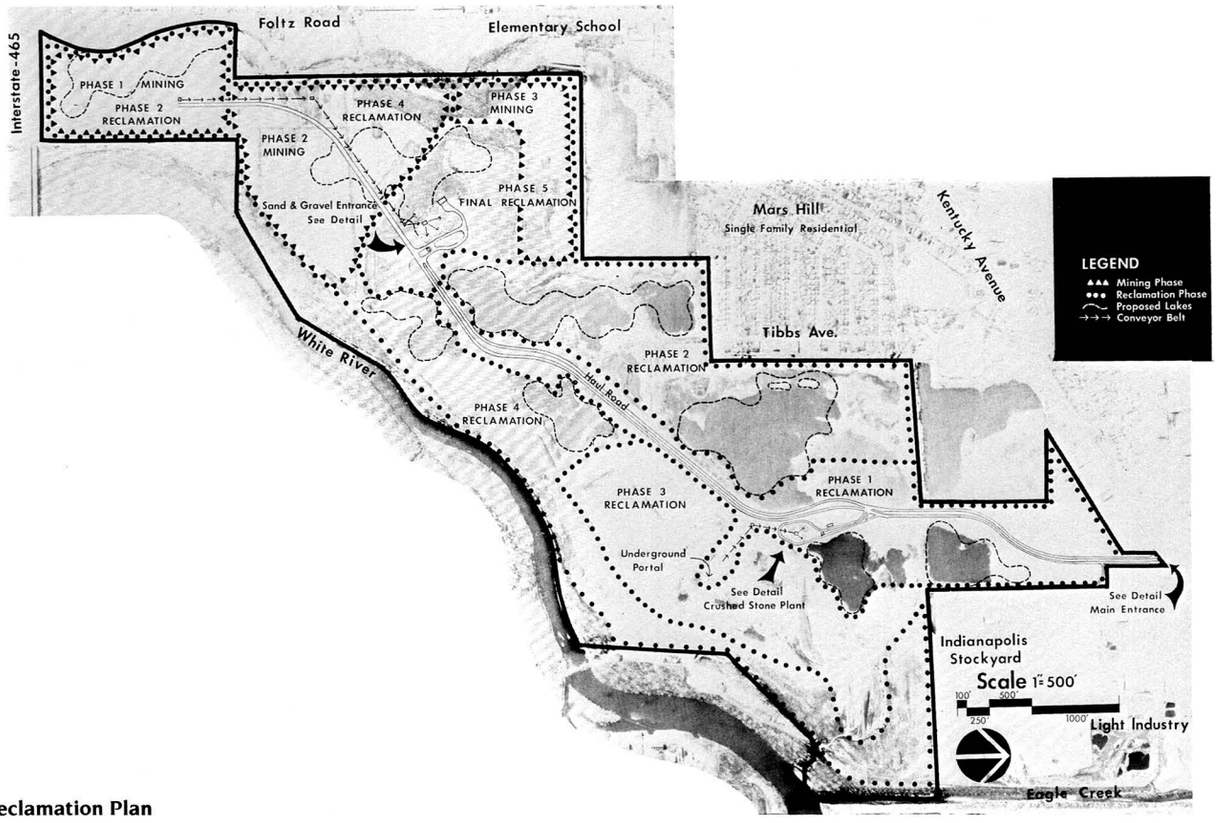
The completion of the progressive reclamation will mark the end of the sand and gravel mining operations. It is estimated that these operations will continue until some time between 1990 and 1995. Only the underground crushed stone mining will remain in operation with a projected termination date of the year 2050.

Determination of post-operational land use was based on the evaluation of several factors including surrounding land use, neighborhood quality and safety, community image, future energy trends, and environmental influences. Alternatives for actual site organization include recreation, residential, industrial, research and development, warehousing, and penitentiary facilities. As a result of the evaluations of the potential uses, a combination of underground housing with support facilities, and above ground research and development

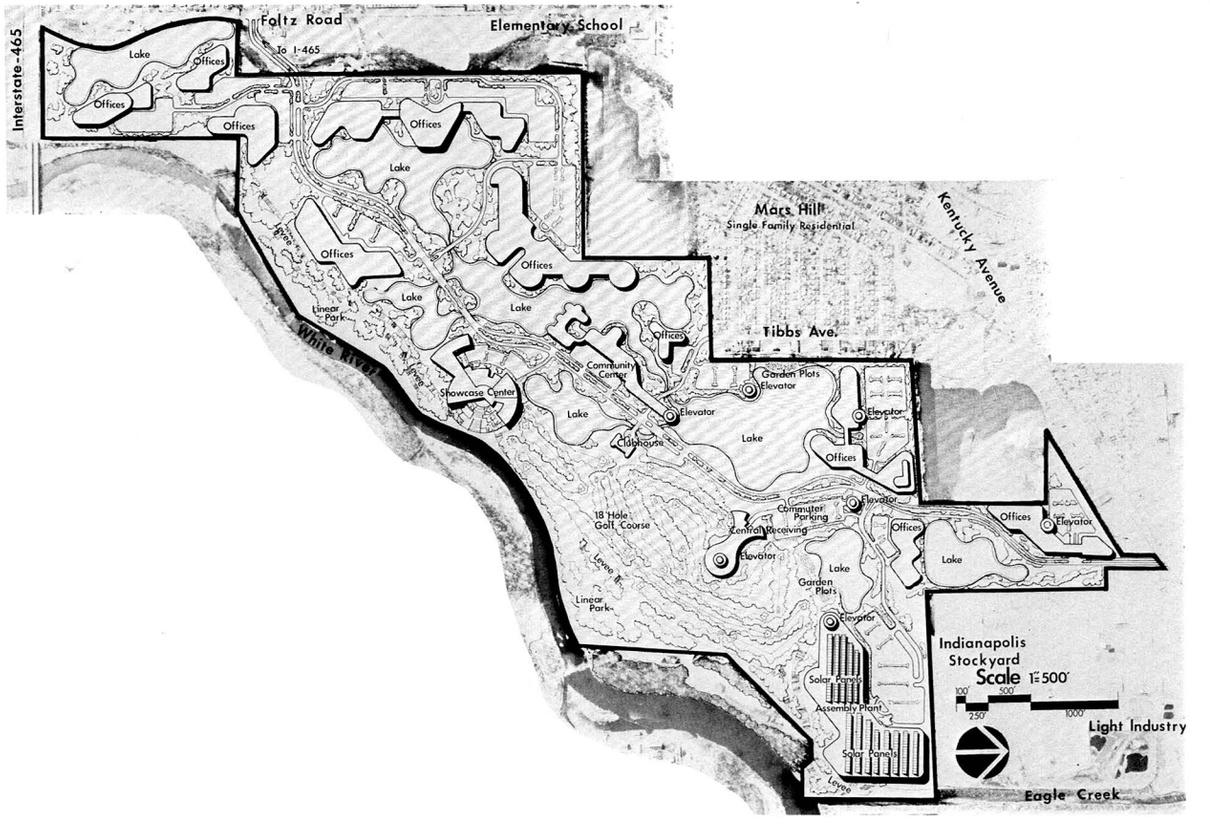
and recreational facilities was developed. This balance of uses will provide both a living and working environment for a variety of clientele.

The adaptive reuse of the room and pillar mine suggests a modular type housing development. The units will be linked by spacious, linear, mall-like avenues, and will be accessible through a series of vertical connections on the surface. The total number of units is estimated at 4100, which will allow a population of 10,000 people. The complex will incorporate 300,000 square feet of commercial space, and several schools located along the interior promenade.

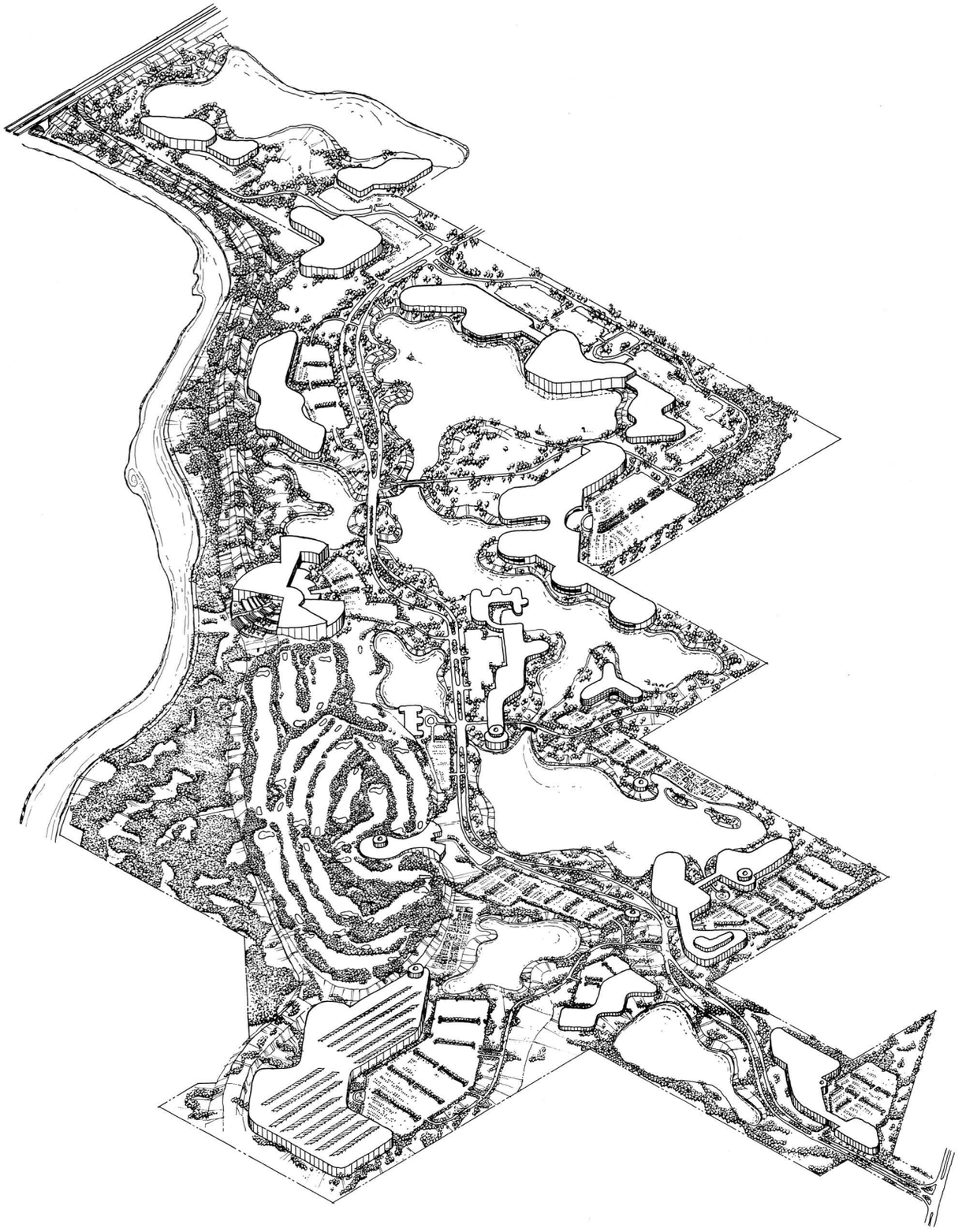
A research and development center provided the major organizing element for the surface design. The center was chosen for its abilities to attract higher quality and visually attractive corporations to the area. This would provide a stable economic industry for the community and create more jobs and, in turn, the need for additional housing, commercial areas, recreational facilities, and community services. Among the activities provided in the master plan are the following:




**Reclamation Plan**




**Final Development Plan**



**Axonometric of Research and Development Center**

1) Research and Development Offices.
2) Assembly Plants.
3) Commercial Centers.
4) A Showcase Center.
5) Recreational Facilities including an 18-Hole Golf Course, Riverfront Park, Club House, and several lakes for water activities.
6) Bicycle and Pedestrian Trails.

The surface development also integrates use of solar energy technology and underground heat pumps.

The completion of the proposed development will mark an important step in the process of rehabilitating derelict urban land in the city of Indianapolis. The site will become a showcase development for rehabilitation of abandoned sand and gravel mines as well as a pace setting development in the area of adaptive reuse of abandoned mines. Aggregate companies have shown a need and desire for landscape architects to become involved in the reclamation process. Although reclamation is a relatively new field, it is one that should be pursued in the future as an alternative to urban sprawl.