

Lied Jungle

Henry Doorly Zoo, Omaha, Nebraska



Project Statistics

Area:	90,000 SF
Completion Date:	1992
Construction Cost:	\$15 Million

Major Program Spaces

- 1.5 acre (60,000 SF) ecosystem displays: 3,000 plant/125 animal species
- 12 Waterfalls and 11 ponds (750,000 gallons per hour)
- Animal holding areas and support spaces (30,000 SF Lower level)
- 350-seat restaurant
- Basement banquet facility (accommodates 200 people)



Original in concept, size and complexity, this 1.5-acre rain forest ecosystem demanded two years of intensive research by the Alvine Aquatics team and involved visits to several zoo facilities, each with exhibits which informed a small portion of this project.

Simulating a rain forest was a test of both man's knowledge of his environment, and the reliability of proven engineering designs, techniques and principles. From the use of engineering concepts to selection of components, innovative solutions were required for problems not previously faced in MEP systems design.

Survival of the Jungle's rare plants and animals directly depends on the efficient and reliable operation of the facility's mechanical and electrical systems. Water temperatures need to be maintained at 75° F to 80° F, and air temperatures need to be kept between the high of 85° F and a winter low of 65° F, with relative humidity requirements of 80-85%.

Fogging systems within jungle "trees" use deionized water and "mist" to increase humidity levels and promote plant growth.

Mechanical Systems

- Display area air handling capacity is 160,000 cfm, with 4 air changes per hour, with the capability to go to 8 air changes
- Six, 1,750 MBh gas-fired boilers
- Fiberglass-panel roof construction allows 85% sunlight to maintain the critical temperature and light levels
- Extensive water recirculation system to conserve natural resources
- Lower level animal areas required:
- Air handling at 40,000 cfm / 10 air changes per hour
- Use 100% outside air with Q-Dot heat reclaim
- Each room has individual temperature control
- Cooling is provided by two 300-ton chillers