



RESEARCH GREENHOUSE

BUILDING: US NATIONAL ARBORETUM
HEADHOUSE / GREENHOUSE – Phase 1

OWNER: USDA / Agricultural Research Service
Facilities Division, Beltsville, MD, USA

CLIENT: RMF Engineering
Baltimore, MD, USA
Mr. Ken Balenske, P.E.

AREA: 7,700 sf

COMPLETION: 2009

This project originates in the need to provide the National Arboretum with up-to-date greenhouse facilities in replacement of older and obsolete greenhouses. Design started in 2002 and construction begun early spring 2007. The project provides 7700 SF of greenhouse space subdivided into 9 research and production greenhouse zones, 1 double-loaded central corridor, a mechanical room and an electrical room, all part of the greenhouse structure. Two compartments are dedicated to propagation, one zone has a tropical climate and the others are for shrubs and turf research. The compartments all have natural ventilation and forced mechanical ventilation, evaporative cooling in the form of fog and cooling pad. Rooms have multiple openings to allow circulation of plants directly from the shade house outside. A link to the main research building is provided. The whole complex is under specialized greenhouse control system. Agritechnove provided professional services beginning with the Program of Requirements up to the end of the construction administration phase.



TECHNICAL SYSTEMS – High clearance interior provides stable climates. Hot water heating with all zone independents. Redundant heating system. Forced air ventilation system. Centralized cooling pad with controlled waterflow. High pressure sodium lighting system providing 200 micromoles. Shading system. Misting propagation using RO water. Bench heating system. Specialized computer control system. Fogging system.