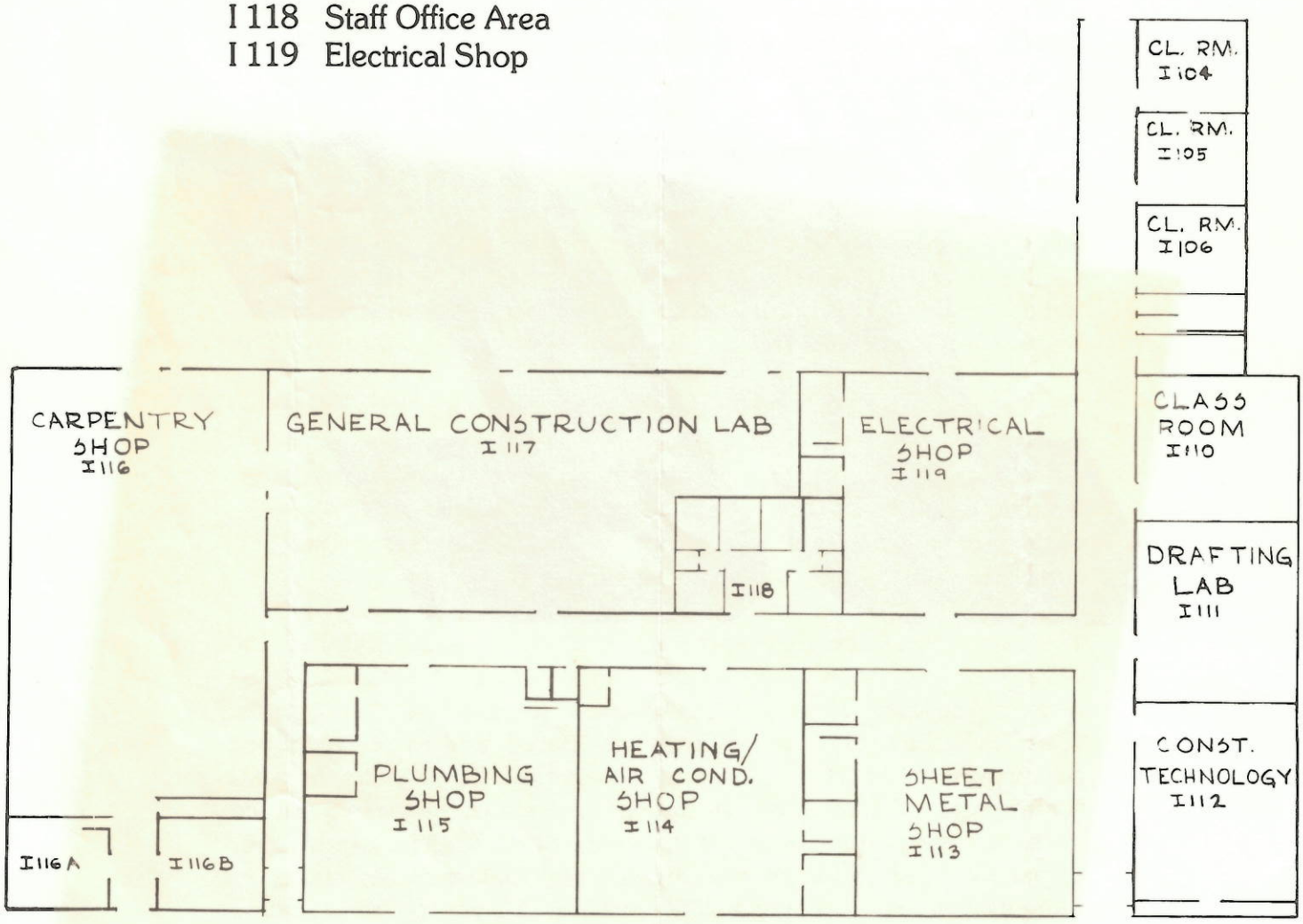
ST. CLOUD AREA VOCATIONAL—TECHNICAL INSTITUTE

I WING

I 104 Classroom
I 105 Classroom
I 106 Classroom
I 110 Large Classroom
I 111 Drafting Lab
I 112 Construction Technology Lab.
I 113 Sheet Metal Shop
I 114 Heating & Air Cond. Shop
I 115 Plumbing Shop
I 116 Carpentry Shop
I 117 General Construction Lab.
I 118 Staff Office Area
I 119 Electrical Shop



I-Wing

St. Cloud Area Vocational-Technical Institute
I-Wing

The new wing adds 44,000 sq. ft. of labs and classrooms to the 225,000 sq. ft. of the Institute, for a total complex of 269,000 sq. ft. This will increase the capacity of the Institute day programs by approximately 200 students.

The complex design emphasizes two concepts throughout; Energy conservation and flexibility of space to provide for expanding technology in residential and commercial construction. The building is constructed with considerable energy conservation techniques used. Two inch styrofoam is sandwiched between the brick facing and the concrete block supporting wall to provide a wall R factor of fifteen. The roof construction includes seven inches of bead board with a one piece rubber membrane roof system with a R factor of thirty.

Roll up exterior doors are reduced to a minimum and those have been installed only in wind protected areas. All glass is thermo pane with minimum glass on North, West, and East exterior walls. Each lab facing South is designed with passive solar glass and heat storage capacity.

The building features a general construction lab and a technology lab that will accommodate the introduction of new construction technology into the curriculum of all building trades. The technology lab includes a passive solar collector and trombe wall heat storage system. Material testing for both moisture and heat resistance measurements are also provided for in the finished lab.

The general construction lab ceiling is twenty-four feet high, providing space to construct a complete house. A portion of the floor, 24' x 34' has earth fill that can be excavated to construct wood foundations, install underground plumbing and electrical services. These features will accommodate student skill development under simulated construction conditions in excavation during the winter months.

The Sheet Metal, Heating and Air Conditioning, and Plumbing labs have South facing passive solar glass areas with underground rock fill heat storage sinks. These are located under the slab in each lab space. These sinks have the capacity to return stored heat to the lab space during the night hours. The Heating and Air Conditioning lab solar glass is also screened with manually opened and closed louvers to reduce heat loss during cloudy days and during the night. These different types of passive solar collection systems will be monitored and tested by students that are developing skills working with energy conservation and space heating and cooling problems in their programs.

This building will provide the flexibility needed to include new technology into the construction trades programs as it is required by industry.

Designed & Printed by
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