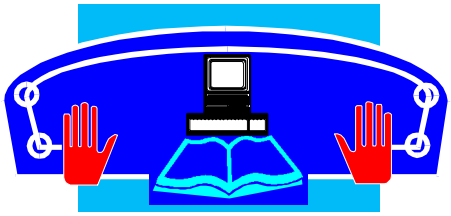

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REPORT

FROBISHER BAY GREENHOUSE PROJECT[1]

by Dr. J. D. Campbell[2]

INTRODUCTION

Early in June of this year, Nr. Sol Deitch, N.W. T. Government of Yellowknife indicated a need for some assistance in getting two greenhouses operational. The first was at Sanikiluaq, Belcher Islands, N.W.T., the second at Frobisher Bay, N.W.T. The author indicated that due to work load, it would not be possible for us to extend ourselves beyond Sanikiluaq. Later, it was agreed that I would make an inspection trip to Frobisher Bay; this report is the result of that undertaking.

PROJECT TO SEPTEMBER 17, 1976

(a) Introduction

The author arrived from Montreal on Friday, September 17, 1976. He was met by the Regional Development Officer (N.W.T.), Mr. Murdoch King and subsequently introduced to the man, Mr. Ken Ii'ebb, who has been responsible for the project to that date. I believe Mr. Webb was under contract with the Department of Rural Development to evaluate the use of solar heat in a small tunnel greenhouse for vegetable growing in Frobisher Bay. Mr. Webb was prepared to carry out the limited objectives of his proposal. Unfortunately, much larger responsibilities were given him, namely, to erect a-commercial "Multipot" greenhouse 21' x 100'.

(b] The Structure

Mr. Webb was not qualified to carry out a highly specialized engineering project. He turned to a person who was interested and also equipped to assist him. This was Mr. John Webster whose entrepreneurial type brother owns a business (Baffin Kamutauyait Ltd.) which specializes in skidoos,

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Arctic clothing, and camping equipment. presently, Mr. John Webster who has a horticultural training and background in England, Holland and the U.S.A., is assisting his brother, but is anxious to return to his own area of expertise. Mr. Webster accepted a contract *to* construct the greenhouse. The "Multipot" greenhouse is designed to cover an area of ' 24' by 99' 4". Unfortunately, there were no directions as to how to put this well designed greenhouse together. Also, many parts were missing, such as:

(1) a 24" Fan-jet with motorized shutter and heating thermostat.
(2) 100' x 24" convection tube and hangers.
(3) a 30" "Acme" Fan, 3/4 hp, 2-speed, 110 volt plus 30" wall box, automatic shutter, fan guard and single stage thermostat.
(4) Fan and equipment similar to #3, except one cooling thermostat (2-stage).
(s) TWO Modine heaters, 175,006 BTU (tobe heated by Propane).
(6] Two motorized shutters, 30".

To make a partially air supported house, requires 2 squirrel-cage fans with arrangements to bring in outside air between the double layers of polyethylene." .

Nr. Webster did a commendable job with practically no guidelines: The greenhouse is approximately 70' x 21' x 13' high at the centre. The supports should have been placed every 30" to produce a 100' greenhouse; they were placed every 2* instead, thus reducing the length' to 70*. The metal supports are covered with a double layer of "Evaflex" a Japanese copolymer flexible plastic material. It is held in,place by means of a cleverly designed groove in the baseboard. .

(c) Heating Arrangements .

Quite unsuitable, costly fuel burning hot water boilers were purchased. In addition to being expensive, hot water heating doesn't fit in with the Multipot greenhouse which is planned to move warm air through the 100' convection tube which runs along the top of the greenhouse.

(d) Water and Sewer

No arrangements have been worked. out. It Would be expensive to have to haul water.

(e) **Work Building**

It is uneconomical to use any part of the greenhouse for anything but plant growing. A work building adjacent to the greenhouse is necessary; this can also house a growing room for starting the plants.

(f) Electrical Power

No arrangements have been made; it is necessary to have electricity to operate fans, lights, etc.

(g) Growing Arrangements

A rather large single bed which covers more than half the space in the greenhouse has been built. It contains several *tons* of sand. I believe whoever designed this, had little experience in greenhouse growing. It would be costly and very inconvenient to manage. Growing in sand is a form of hydroponics which calls for a high degree of technology plus more expensive plant nutrients than growing in soil or peat moss.

(h) Wind Protection

Although the greenhouse is protected by adjacent buildings, it has been decided that it should be protected by a *covering* of "Triflex" a reinforced polyethylene manufactured by Consolidated Bathurst. This is being custom built by Curry Industries of Winnipeg.

FUTURE PLAWS

(1) Management

It"is my understanding that Mr. John Webster will be in charge of the project. This shouldbe a wise decision since he has both the necessary enthusiasm and background. However, his European and experience in the U.S.A. will not be sufficient for northern growing. We believe he should take the greenhouse management course (see enclosed) next January, 1977. We would suggest that he stay over in Winnipeg for a week. During this time I would be prepared to have many planning sessions with him plus other members of our Greenhouse Team to work out detailed plans for his 1977 program.

"GENERAL COMMENTS

We are convinced that the need for the greenhouse production of vegetables in Frobisher Bay is both badly needed and practically possible. The cost for any first-of-its kind operation, is bound to be somewhat high. We have now two examples, Thompson and Churchill of projects which are resulting in many "spin-offs" (see enclosed Winnipeg Free Press Release of October 16). A well designed greenhouse with growing rooms and tunnels in a few strategic areas can stimulate andserviceanumber of adjacent communities. However, much planning and work will need to be done in the months ahead. The greatest weakness of the Frobisher Bay project has been the lack of meaningful planning and preparation.

RECOM4ENDATIONS

1. That the greenhouse be made secure for the approaching winter.

2. That installation of the responsibility for providing basic ser@ces such as water, heat and electricitybe assumed possiblyby the Department of Public Works..

3. Fencing-of the area should be considered.

4. Plans should be made for Mr. Webster to attend the Greenhouse Management Course, plus a one- or two-week stay with our team on work planning for the 1977 crop. Out of this, a comprehensive plan will be drawn up (written by the author) which will outline the requirements prior to the spring of 1977.