

FIELD STUDY VISIT PROGRAMME
16 January 2008
Leaving from the UN Building at 8:30 in the morning

The Royal Chitralada Projects on bio-diesel/fuel switching and organic agriculture
0900-11:30 hours

08:30	Departure from UN Building
09:00	Arrival at the Royal Chitralada Projects
11:30	Departure to UN Building

Short facts about the Royal Chitralada Projects

The Royal Chitralada Projects are for non-profit making and serve experimentation and demonstration purposes. The Projects emphasis is on the economic and optimal utilization of the natural resources and agricultural inputs available in Thailand. The Projects rely on scientific and technological progress in conducting studies, research and to collect data. Information about the results are disseminated through demonstration to farmers and to all people who are interested.

His Majesty the King has allocated an area within the compound of his residence, Chitralada Place, for use in agricultural research and experimentation for his study and to find appropriate means to remove the constraints. These projects are divided into two types:

- o non-business projects, and
- o semi-business projects.

I. Non-business Projects

These projects are undertaken to implement His Majesty's initiatives for increasing agricultural production efficiency and for improvement of the quality of life of farmers, enabling them to become self-sufficient in food production and to earn additional income. He also places emphasis on the development, conservation and eco-efficient use of natural resources.

The non-business projects include, among others, the following:

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| 1. Culture of <i>Tilapia mossambica</i> | 10. Water hyacinth as potting material |
| 2. Culture of <i>Oreochromis niloticus</i> | 11. Plant tissue culture |
| 3. Biogas production | 12. Rattan project |
| 4. Experimental rice fields | 13. Propagation of the unique-characteristics jackfruit tree at the Grand Palace |
| 5. Upland rice | 14. Soiless culture |
| 6. Demonstration Forest | 15. Royal-candle factory |
| 7. Medicinal plant garden | 16. Culture of <i>Spirulina platensis</i> |
| 8. Green fuel | 17. Scientific experiment laboratory |
| 9. Water pollution control through water-hyacinth cultivation | <i>Research and Development Unit</i> |

II. Semi-business Projects

Projects of this type sell their products at commodity level prices. Being non-profit projects, they aim at promoting public consumption of inexpensive quality products produced in Thailand. These projects are:

1. Chitralada Dairy Farm
2. Chitralada Milk Collection Centre
3. Suan Dusit Milk Powder Plant
4. Milk Tablet Plant
5. Cheese-Ice-cream Plant
6. Vegetable & Fruit Juice Plant
7. Vegetable & Fruit Drying Plant
8. Vegetable & Fruit Juice Cannery
9. Experimental Rice Mill
10. Rice-husk Grinding and Compressing Plant
11. Liquid Fuel Research Project Plant
12. Saa-paper Factory
13. Organic Fertilizer Plant
14. Fish Food Factory
15. Mushroom Culture

12:00-1300 Lunch at the UN Building

**Shinawatra University and Eco-Bio-House designed by Prof. Soontorn Boonyatikarn
13:00-1730 hours**

- 13:00** Departure from UN Building
14:00 Arrival and tour of Prof. Soontorn' s Bio-Solar House
15:00 Departure to the Shinawatra University
15:30-16:30 Lecture and tour of the University
16:30 Departure to UN Building
17:30 Arrival UN Building

Short facts about the Shinawatra University

Site Location: Pathumthani (about 60 kilometers from Bangkok), Thailand

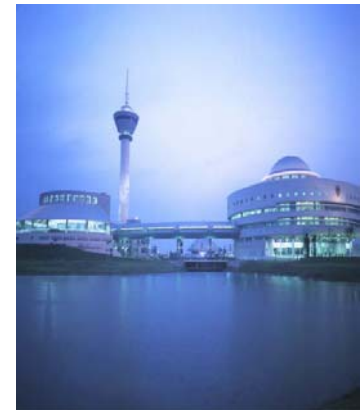
Project Owner: O.A.I. Education Co., Ltd.

Co-designers: Prof. Dr. Soontorn Boonyatikarn,
D.C.M.2000 Co., Ltd.Mr.Nipat Suetrong,
Nipat and Associates

Structural Engineer: ACTEC Co., Ltd.

Mechanical Engineer: EEC GROUP

Builder: Thai Obayashi Ltd.



The University was completed in 1997. Its innovative design has claimed several energy awards and prizes such as the *Asian Energy Award 2003* and *Energy Efficient Buildings 2003*. Architect Dr. Soontorn Boonyatikarn, Professor of Architecture, has made the university a prime example of sustainable architecture. The university couples comfort, aesthetics and

safety with economic force and energy conservation for the preservation of the environment and a heightened quality of life. The academe stands as a living proof of energy efficiency of air and cooling applied in tropical climate and can inspire others to follow suit towards a more integrative approach to building and environment.

In order to create a cooler environment on campus the designers reserved ample space for trees and water and made good use of their qualities as natural cooling agents. By integrating the freely available natural system of cooling with air-conditions of the buildings, it became easier keep a low temperature inside the buildings on campus and simultaneously saved a lot of money. While initially a slightly higher investment was needed in the building envelope (+ 25 Million Baht), the decreased cost air-conditioning (- 75 Million Baht) resulted in overall savings of 50 Million Baht. On a longer time perspective the lower energy consumption of the university has made it even more energy efficient compared to conventional buildings.

Short facts about the Bio-Solar House

The Bio-Solar House - designed not only to be energy efficient but to produce energy - was inspired by the humble mango tree, echoing the ideas of some of the brightest international names working in eco-architecture today.

Electricity for the Bio-Solar House is generated by 62.5m² of solar panelling. They provide a surplus of energy, and every month Prof. Soontorn sells up to 1,000 baht (US\$29) of electricity back to the national power grid.



All water is recycled, with the highly-insulated house also collecting dew, rain and condensation from the air conditioning.

Heat from the air conditioning warms the pool and the hot water, while the house is designed to make the most of natural light and air flow - simple measures that experts say would improve life for millions of people