

CHAPTER 6 : COMMUNITY SERVICES

The Faculty of Civil Engineering has been doing a lot of community services work since the early days of its existence. The services given to the community is a gesture that the faculty is concerned about the development of the community outside the university. Taking advantage of diversified areas of expertise available in the faculty, varieties of community services works have been undertaken that have benefited many people. The work involved survey and site investigation work, water supply, landscape, mapping, project involving the transfer technology of ferrocement and fibreglass, organising computer courses and others. The personnel involved in the community services work include lecturers, technicians and students of the faculty. The faculty has appointed Associate Professor Zainudin Mohamed Shamsudin as the chairman of the community services work since 1997 to date. Before, it has been headed by Associate Professor Dr. Fauzi Abd. Samad and later, Associate Professor Dr. Fadil Othman.

Project Involving The Transfer Technology of Ferrocement

Ferrocement is a new technology in the construction industry. The Faculty of Civil Engineering has pioneered a wide use of ferrocement under Professor Ir. Dr. Mohd Warid Hussin and his team from the

Department of Structures and Materials. Since early 80's, they have involved in many projects such as the construction of facilities for recreational area such as benches, animal statues and boats, monopod or bus stop shelter, landmark and others, carried out all over Malaysia. Among the places and organisations benefited from these works are :

- (i) **Universiti Teknologi Malaysia** - for the Faculty of Civil Engineering, FKA (1998), Faculty of Chemical Engineering and Natural Resources, FKKSA (1999), Kolej Tun Abdul Razak (1998) and Kolej Tun Fatimah (1997).
- (ii) **FELDA** - for Felda Bukit Aping Timur, Kota Tinggi (1995), Felda Ulu Dengar, Kluang (1996) and Felda Tenggara Timur 2, Mersing (1994), Johor.

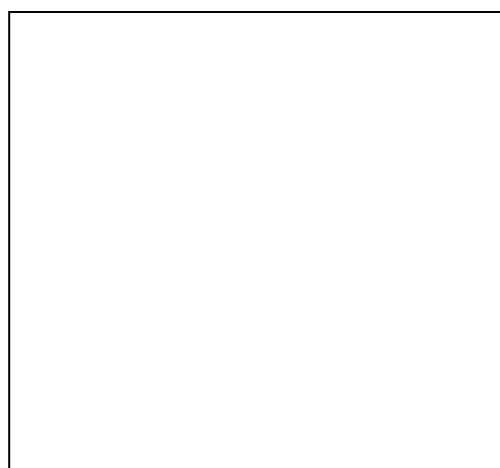


Benches and tables made of ferrocement situated at the compound of the faculty

(iii) Villages and Schools - Work has been carried out at Bandar Baru Uda 2 Primary School, Johor Bahru (1994), Semenchu Secondary School, Kota Tinggi (1997), Tiram Duku Primary School, Gelang Patah (1997) and Kampung Perpat Timbul, Serkat, Pontian (1992), Johor, Kampung Padang Kemunting, Masjid Tanah, Melaka (1997), Kampung Betong, Kampung Tanggai and Pekan Air Mawang, Negeri Sembilan (1995), Kampung Chenor, Maran, Pahang (1994), Kampung Pengkalan, Ulu Grik, Perak (1995), Kampung Megabang Telipot, Kuala Terengganu, Terengganu (1997), Kampung Baru, Kampung Bakar Kapur and Padang Terbas, Penaga, Kepala Batas, Seberang Prai, Pulau Pinang (1996), several villages in Kelantan (1994) and Kampung Bubul, Semporna, Sabah (1994).

The community works in the fishing village called Kampung Perpat Timbul, Serkat, Pontian, Johor was supported by the Johor State Government. A total of 15 villagers and 12 staff of the faculty had volunteered in the programme. In the programme, a two days short course on Technology of Ferrocement was organised on 28 – 30th June 1992, followed by the construction of facilities for recreational areas. A

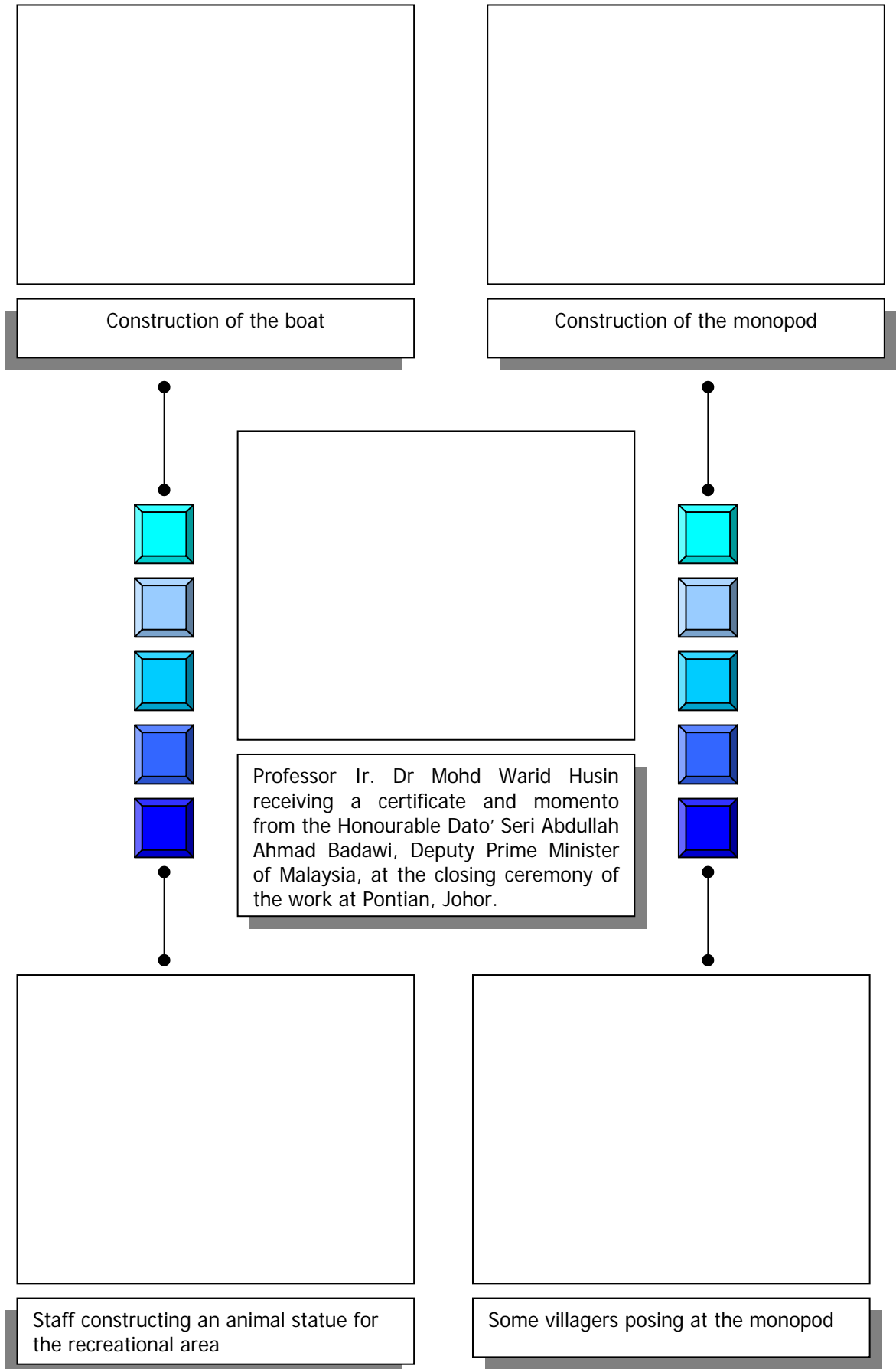
recreational boat made of ferrocement was also constructed with a dimension of 6 m length, 0.8 width and 0.6 m depth. A monopod of 4m x 4m x 3.2m high for the bus stop, was also constructed in the village.



Some of the villagers attending the two days short course on Ferrocement



Construction of the boat



Although Malaysia is considered as a developing country, there are people living in remote area who could not get clean water through pipes connecting to their house. However, with the application of simple technology, clean water is able to be supplied using the groundwater as well as water from the rainfall. A group of volunteers from the faculty had successfully used the technology in schools and villages such as follows :

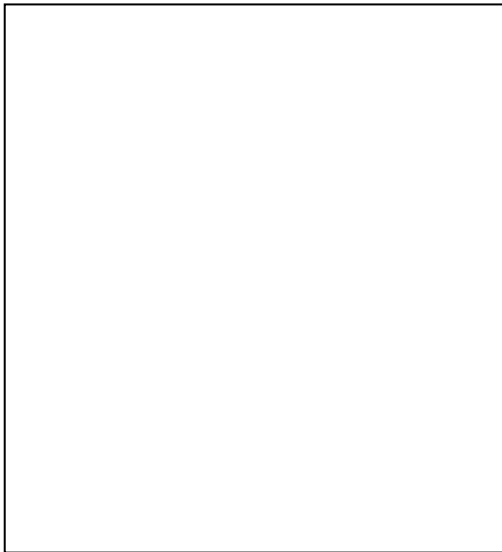
(i) Kampung Tanjung Jawa, Sabak Bernam, Selangor

This project was carried out in early 1988 and sponsored by UNESCO for the amount of RM 20,000. It was aimed at supplying clean water to the school, situated in a remote area of Sabak Bernam, Selangor. It was headed by Associate Professor Dr. Fauzi Abd. Samad and Associate Professor Dr. Fadil Othman. More than twenty staff were involved in the project together with about thirty undergraduate students.

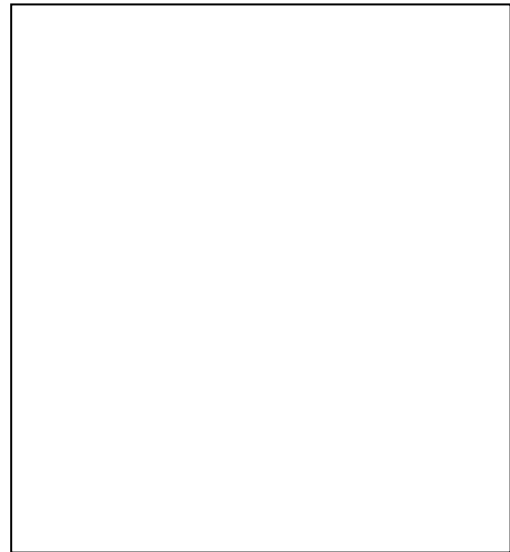
The project started with survey work on the project area followed by the site investigation work to investigate on the shape of the aquifer as a source of groundwater, water quality, as well as the soil profile. Once the

source of groundwater was established, a well was constructed and water was then pumped from the well into a storage tank. From the tank, the water was treated by allowing it to pass through sand filter and activated carbon where it resulted in clean water for consumption. The clean water was then pumped into a storage tank, situated at high level, before it was distributed to the school and houses at the school complex. Four wells and four storage tanks were constructed for supplying the clean water to the school and houses at the school complex.

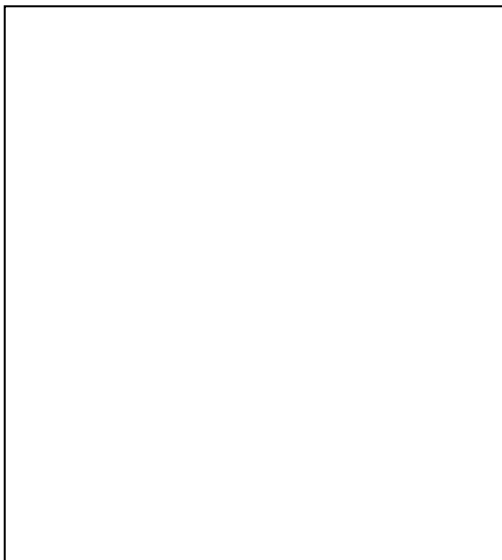
Natural water from the rainfall was also collected at the school building. This was done by channeling the water, collected through the gutter and using the down drain pipe channel the water into a storage tank. The collected rainwater was then used by the school children for washing their hands and feet as well as for ablution purposes. The project was a successful one where it was benefited the community besides as a training ground for the students.



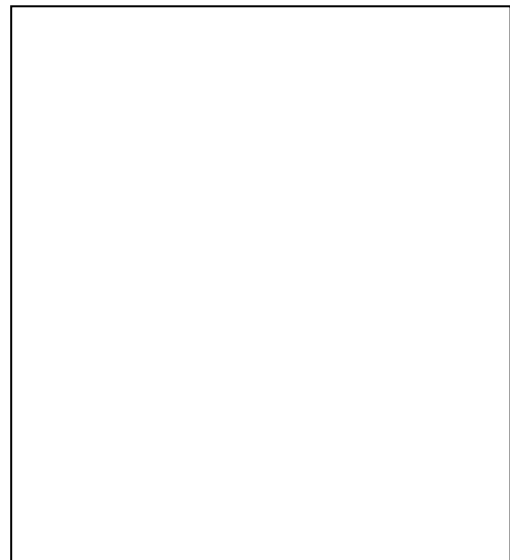
Drilling of well is in progress



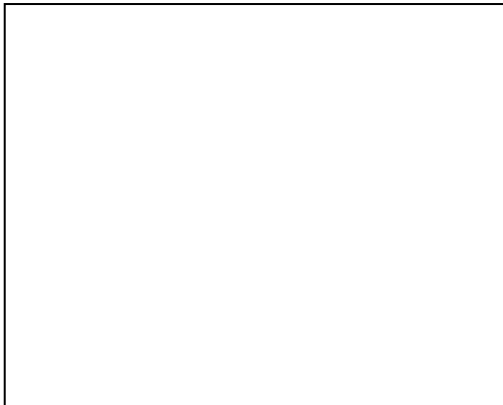
PVC pipes are being connected from the well to the treatment tank



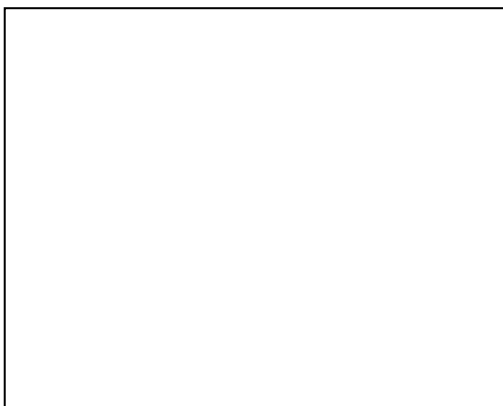
Students crushing the activated carbon to be used in filtering water



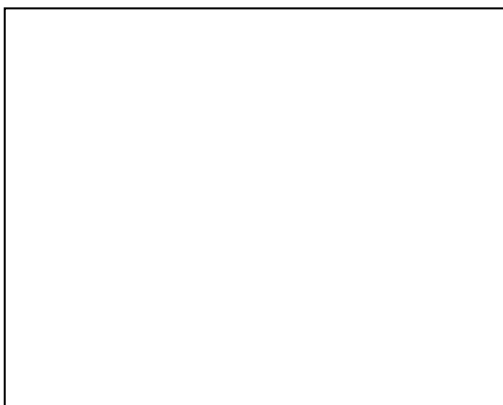
The storage tanks



Down drain pipe to drain the rain water from the gutter to the storage tank



Clean water is used in the school toilet



Clean water from the standpipes for the consumption of the local people

(ii) Villages of Natives (Orang Asli), Simpang Arang, Gelang Patah, Johor

This project was jointly organised by the faculty and the Department of Natives Affairs or Jabatan Hal Ehwal Orang Asli (JHEOA) and it was participated by members of the faculty and students following the successful work in Kampung Tanjung Jawa, Sabak Bernam, Selangor. The project was co-supervised by Associate Professor Dr. Fauzi Abd. Samad and later by Mr Mohamed Zahry Othman .

The aim of the project was to supply clean water for the consumption of the villagers. Beside that, the water supply was also used for the public baths and toilets to ensure the cleanliness and hygiene of the local community.

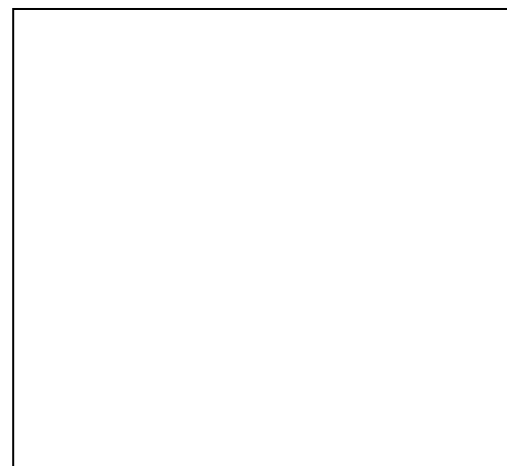
The scope of the project included :

- Constructing three pump houses and a tube well with the capacity of supplying 10,000 litre of raw water per day
- Distribution of water through PVC pipe from the storage tank to the treatment tank, and then to the toilets, bathrooms and public pipes
- Constructing the treatment tanks
- Constructing five public bathrooms that include the standpipe, shower and soakway

- Constructing two units of public toilets complete with pit tank and soakaway pipe
- Other related jobs

The concept of the project was similar as in Kampung Tanjung Jawa except that the water was treated before it was supplied to the houses and public toilets. The project includes supplying electricity to the houses and performing the restoration work to some of old houses in the village.

The work received acknowledgements from the JHEOA. As for the students, beside being trained in civil engineering work, they were also exposed to the life of the natives where they had a chance to learn the culture of the natives and appreciated their survival of life.



Site investigation work is being carried out



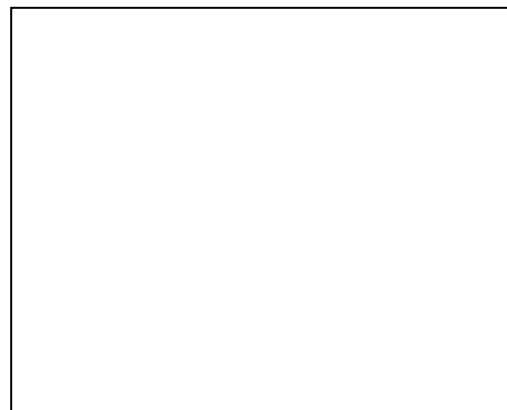
Laying bricks for the construction of public toilets

(iii) Madrasah Al-Quran Sinaran Baru, Skudai, Johor

The Faculty of Civil Engineering has contributed a community service to a hostel of a religious school, called Madrasah Al-Quran Sinaran Baru, in Skudai, Johor by constructing a few tube wells for the purpose of supplying water to the students. A group of staff including lecturers and laboratory staff had succeeded at constructing four tube wells around the school compound. A specific location for the tube well was chosen based on the available quantity of groundwater so that a continuous supply of water could be achieved.

Once the location was confirmed, drilling was carried out through the ground until the groundwater level is found. The wall of the well was then strengthened by

inserting a PVC pipes that consist of filter and holes for water to seep through. Lastly, the groundwater was pumped out and distributed through PVC or steel pipes to the hostel. Headed by Dr. Norhan Abd of the Department of Hydraulics and Hydrology, the project was completed in five days.



Drilling to find suitable location for tube well



One of the tube wells at the site

Supervision of Construction Projects

Having more than one hundred academic staff qualified as civil engineers, the faculty can be considered as a source for professional works like site investigation, design and supervision for civil engineering projects. Beside the outside community, the Universiti Teknologi Malaysia appointed the academic staff to perform the civil engineering work for some of its project.

(i) Laboratory of Faculty of Civil Engineering, UTM

When the faculty moved to Skudai campus in 1989, the construction of laboratory were not completed yet. Professor Dr. Zainai Mohamed, dean of the faculty during the time had appointed Associate Professor Dr. Ahmad Mahir Makhtar and Mr. Mohd. Zahry Othman to assist in the supervision work of the Civil Engineering Laboratory until completion in 1990.

(ii) Strong Floor at Structures and Materials Laboratory, UTM

Professor Zainai Mohamed was appointed by UTM to design and

supervised the construction of strong floor in the Structures and Material Laboratory. The strong floor dimensioned, 27 m length, 13 m width with 1 m grid anchor is to house heavy machinery in the laboratory. The construction of strong floor was completed in 1990.

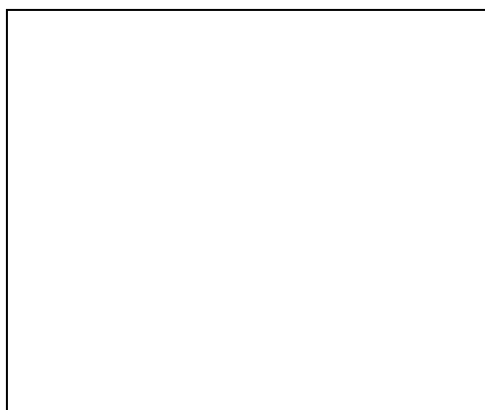


Strong floor in Structures and Materials Laboratory, UTM

(iii) Footbridge in Kampung Merbau, UTM

The Universiti Teknologi Malaysia had moved from Kuala Lumpur to Skudai campus in stages since 1987 with the faculty itself moved in 1989. As it was a new campus, some facilities were not available in the early nineties. A student hostel called Kampung Merbau was not linked to the multipurpose

complex that housed prayers room, dining hall, cafeteria, grocery shop and common room. The students to walk a long distance along the river before they reached the complex. As a result, the Office of Student Affairs (HEP) had requested to the faculty to help in making a feasibility studies on the construction of a footbridge over a river that separate the hostel to the complex. A group of staff, headed by Dr. Muhd. Zaimi Abd. Majid, had taken the task and produced the report on the feasibility study.



Footbridge at Kampung Merbau, FKA

The project was sponsored by the HEP. As for the faculty level, fifteen staffs were involved in the survey and site investigation works, design and construction of

the bridge, and supervision of the whole project. Undergraduate students from the faculty were the source of labour for the project besides the help from the Director of Work Office.

(iv) Building for Student Co-Curriculum Centre, Kampung Chengal, UTM

In 1991, the Director of Work Office approached the faculty to help them with the construction of a timber structure building for student co-curriculum centre to be situated near to the student hostel called Kampung Chengal in UTM Skudai.



Building for Student Co-Curriculum Centre, Kampung Chengal, UTM

The faculty, headed by Associate Professor Ir. Mohd. Zain Yusuf, then set up a committee for the project. Most of the staff involved

in the project were from the Department of Structures and Materials and Department of Geotechnics and Transportation.

(v) Stall From the Replica of Fruit, Pontian, Johor

In 1994, The Society of Malay Small Sellers and Traders, Johor had elected Professor Ir. Dr. Mohd. Warid Hussin as a consultant for the construction of stalls from the replica of fruits that made of ferrocement. The project was sponsored by Majlis Amanah Rakyat Bumiputera (MARA) and Pontian District Municipal council, Johor. Five stalls were constructed and they were located around strategic places in Pontian district.

(vi) Mosque of Taman Universiti, Johor Bahru, Johor (1996)

Quite a number of UTM staff live in Taman Universiti, Johor Bahru, a developed residential area about 5 minutes drives from UTM campus. Since the number of Muslims resident has arisen in the area, they need a bigger place to worship. Therefore a new mosque

is needed. As this is a private mosque, the financial constraint occurred. Some staff from the Department of Structures and Materials then volunteered to design the mosque. The structural design of the building has completed and the construction of the mosque is about to begin.

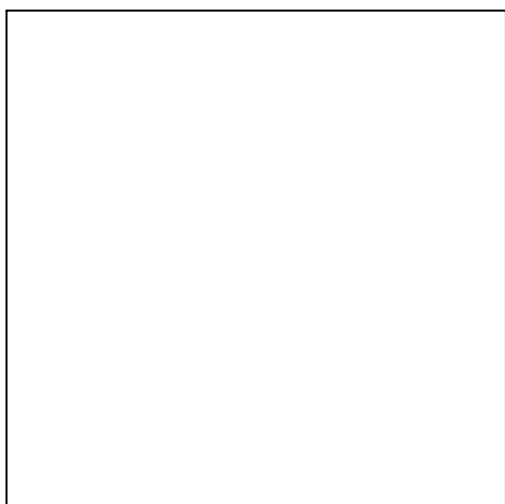
(vii) Hidayah Islamic Primary School, Senai, Johor (1998)

Hidayah Islamic Primary School is a small private school situated not far away from UTM. As the number of enrolled students increased the management of the school decided to build another school building nearby the existing area. FKA was approached to do a site investigation work as a preliminary work before the building could be designed by a consultant. Headed by Mr. Kamarudin Ahmad from the Department of Geotechnics and Transportation, the work involved probing, using the Mackintosh probe, through the soil layer of certain locations to investigate the soil strength at various depth below the ground. This is an important task whereby the information gathered could

influence the design of the foundation of the structure as well as the structure itself. The results of the investigations was documented in a Site Investigation Report that was submitted to the school, which later handed it over the consultant. Due to high commitment of the staff, the work was completed within just one day!

(viii) Solar Bus Stop, UTM (1999)

Dr. Fadhadli Zakaria and Dr. Abdul Aziz Chik were two academic staff involved in the solar bus stop project. They were assisted by technicians from the Department of Structures and Materials and undergraduate students.

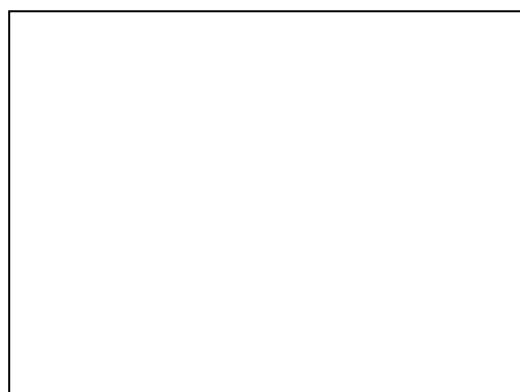


Solar bus stop in UTM

The structure of the bus stop was made from timber and the solar energy was used to light up the bus stop at night.

(ix) Surveyor and Geologist Work

Beside qualified civil engineers, the faculty also consists of staff from other areas of expertise such as land surveyor and engineering geologist. They are also involved in community service works undertaken by the faculty. The most recent one is the national project for the construction of Geological Museum at Tanjung Balau and Tanjung Lompat, Kota Tinggi, Johor, headed by the Geological Society of Malaysia and KEJORA. The staff of the faculty involved in this project are Dr. Mushairry Mustaffar, Mr. Mohd. For Mohd. Amin and Mr. Che Ros Ismail, as well as the technical staff from the Survey Unit of the faculty. The work includes detailed survey mapping of rock intrusion and geological structures of the areas.



The proposed site for Geological Museum

