

## Visit to The Meteorological Station at Cameron Highlands



by Ir. Assoc. Prof. Dr Jeffrey Chiang

TECHNICAL COMMITTEE ON WIND LOADING

**THE** visit was organised by the IEM Technical Committee (TC) on Wind Loads which is chaired by Ir. Assoc. Prof. Dr Jeffrey Chiang. The other Technical Committee members involved in the visit are Ir. MC Hee, Ir. Tu Yong Eng and Mr. Tan Huvi Vein. Incidentally, Mr. Tan is also a senior officer of the Malaysian Meteorological Department (MMD) and was instrumental in organising the visit on behalf of the Technical Committee.

On 23 April 2011, the delegation departed by bus from Bangunan Ingenieur at about 8.30am, and reached the Meteorological Station at Cameron Highlands at about 12.00pm, via the Tapah exit point along the North-South Expressway. The uphill drive was quite long and winding, but the traffic was sparse due to the off-peak tourist season.

On hand to welcome the delegation was the Officer-in-Charge, Mr. Ong Lian Poh, who graciously took the visitors for a sumptuous lunch at a nearby restaurant in Brinchang town.



Figure 1: Mr. Chan, Director of Maxtwo Engineering & Services Sdn Bhd, sharing his success stories after more than 10 years in the industry

After lunch, Mr. Ong proceeded to give a first-hand hour-long tour of the station's facilities, in particular, the measuring instruments at the rear compound of the station. In addition, the visitors were also shown the newly constructed tower block which houses some of the more impressive and latest computerised recording machines, which took up one of the upper floors. Wind speed recordings are all automatically captured and sent electronically to the main MMD Headquarters in Petaling Jaya. As in most parts of the Peninsula, wind speeds there are dominated by thunderstorm downbursts.

The objective of the visit was for the TC members to have a first-hand look at the typical layout of wind speed measuring instruments in MMD stations located

in Peninsular Malaysia. Since the TC has been tasked to review the current Malaysian Wind Code MS1553:2002, there is a possibility that the wind speed data presented therein may have to be updated. The committee is also considering the possibility of adopting Eurocode 1-4 Wind Actions, like what Singapore has done. It has to be mentioned here that the current MS1553 prescribed 3-second gust wind speeds, which is suitable for Malaysia due to its frequent thunderstorm winds, whereas Eurocode 1-4 recommends 10-min hourly wind speeds which is more suited for prevalent winds found in northern Europe. More in-depth study has to be carried out by the IEM TC, provided the requested financial support is forthcoming from the Department of Standards Malaysia (DSM).

A previous visit by the TC was made to the MMD station located at the old Subang Airport, which is on flat terrain with hillslopes about 2-3km away. For the Cameron Highland visit, the committee had a chance to observe how the various wind speed measuring instruments were sited atop a steep hill which is located a short distance away from the main street of Brinchang town. Besides the wind speed detection instruments, other equipment are also available, including devices for measuring air quality (as part of the global atmosphere watch station), rainfall collection and other readings. The location is good as there are minimum obstacles all round, although the surrounding hillslope areas are being cut and used for resort development. Very soon, the terrain in the vicinity may change with more high-rise resort buildings being built for holidaymakers.

The delegation was surprised to learn that a nuclear radiation detection facility was also housed in the MMD station compound – it sits right next to the existing building. It is exclusively off-limits to visitors, hence Mr. Ong could only give a verbal explanation of its function, which is essentially to constantly monitor the amount of radiation in the surrounding environment emitted from local as well as regional sources. The recent triple disaster on 11 March 2011 in Eastern Japan came to mind, with the nuclear plant crisis which followed the magnitude 9.0 earthquake and the ensuing 10m high tsunami hitting the eastern shores of Japan.

As a matter of interest, the area in the vicinity of Ipoh city generally has a higher wind speed than other parts of Peninsular Malaysia. For example, for a return period of 50 years, the wind speeds for selected urbanised areas are as follows:

Table 1: Typical wind speeds in major locations  
[Source: MS1553:2002]

Town	Wind speed (m/s)
Ipoh	33.5
Cameron Highland	26.8
Subang	32.1
Melaka	29.4
Bayan Lepas	27.5
Senai	29.1
Mersing	32.0
Kuantan	29.8
Kota Bahru	32.4
Kuching	32.6
Kota Kinabalu	30.5



Figure 2: Mr. Ong explaining the use of the hydrograph and thermograph instruments

Towards the end of the on-site briefing and tour, Mr. Ong treated the visitors to some of the highlands' renowned fresh fruits and pastries from nearby farms. At the end of the visit, the head of the delegation, Ir. Assoc. Prof. Dr Chiang thanked the gracious host for the kind hospitality extended to the IEM delegation, and presented a souvenir to Mr. Ong.



Figure 3: Further demonstration was given on a sub-grounded rain catchment measuring device.

The delegation departed from the station at 4.30pm, and the bus arrived safely back at the IEM Headquarters at 7.30pm. The visit had been very enlightening and refreshing in more ways than one, and the IEM TC would like to thank MMD for kindly consenting to and hosting the visit.

The TC will continue the collaborative effort between its Working Group 2 with the MMD technical staff, by jointly carrying out rigorous wind speed data analysis, based on the numerous wind speed records of all the MMD stations. Once the data is harmonised, a set of reasonable and accepted wind speeds for all parts of Peninsular Malaysia can be established. ■

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