

Talk on 'Balanced Approach as a Lady Engineer'

SUB-COMMITTEE ON WOMEN ENGINEERS



by Ir. Toh Ai Ching

THE following is an extract of the talk on "Balanced Approach as a Lady Engineer" presented by Puan Siti Rosnah Ghafar during the tea party gathering organised by the Women Engineer Sub-committee on 20 March 2010.

Women generally have to play many roles, as a career woman, wife, mother, daughter, sister, *etc.* Balancing the demands of their career as an engineer and the demands of the other roles is vital in ensuring sustainable and continuous success.



Figure 1: Puan Siti Rosnah during her talk

The question is, can women engineers really take the 'abundance' approach, *i.e.* be successful in their career as well as personal life? Is being an engineer our true calling?

Women have many natural gifts, *i.e.* emotional intelligence, attention to detail and the ability to multi-task. At the same time, women also possess weaknesses such as lacking in physical strength, prone to distraction, lack discernment, distinction and analytical capabilities as well as limited mobility.

Women engineers can capitalise on their natural gifts in their daily lives. They can seek to achieve a personal balance as they fulfil their role as an engineer in many ways. They naturally have the gift of the gab, which is an advantage when liaising with clients, sales and marketing, event organising, project coordination and lecturing. They also have the innate ability to listen attentively, emphatically and compassionately, which gives them the upper hand in dispute resolution and contract negotiation.

Patience is ideal for women engineers engaged in research and development as they do not get bored doing the same things year in year out. The development of new patents, guidelines and standards, as well as bench marking requires patience. The caring nature of women comes in handy when dealing with information management,



Figure 2: The attentive crowd

document control, quality assurance, audit checks and health safety and environmental works which require diligence and attention to detail.

Good writers are generally in high demand, more so in engineering works involving letter writing, specifications, reports, technical notes, *etc.* In these areas, women have the advantage due to their attention to detail.

Multi-tasking is without doubt an area where women engineers are the champions. With their experience of multi-tasking at home, they can become good managers of projects and organisations.

If women engineers persistently carry out their jobs with joy using their natural gifts and talents, not only can they achieve perfection in their contribution as engineers, it also allows them to increase their performance in all aspects of their lives.

Women engineers can also seek balance in their relationship with others by adopting positive values and habits when dealing with employers, clients, public, *etc.*, which are imperative to being productive and happy in their profession. Conventional wisdom suggests the development of a healthy self-esteem via a win-win approach in life.

The acceptance and respect of one's identity as a woman, and the respect for both parties are necessary for win-win deals. Understanding the gifts and abilities of women engineers and choosing job functions that capitalise on their strength will maximise their contributions.

Women engineers should view their job not as a chore but as something they love doing. Peak performance and achievements are more likely when working in jobs that one loves. Women engineers can expand their circle of concern beyond their duties to employers by deliberately adopting social responsibility in their jobs, for example, by doing community service.

However, women engineers must be patient and adopt a suitable time frame to achieve their career goals and make

contribution to society as their career can span over 30 to 40 years. Each day may present new opportunities for all to adopt and achieve a perfect balance in life. Thus they must be receptive to all these opportunities.

Here are some quotes to ponder:

- Frank Herbert : "There is no secret to balance. You just have to feel the waves."
- Albert Einstein : "Life is like riding a bicycle. To keep your balance, you must keep moving."
- Mahatma Gandhi : "Happiness is when what you think, what you say and what you do are in harmony."
- Lao Tzu : "If you would take, you must first give."
- Winston Churchill : "We make a living by what we get; we make a life by what we give."
- Anonymous : "Never take life seriously. Nobody gets out alive anyway."

In conclusion, a balanced approach should be adopted in everything women engineers do. When perfect balance is achieved, one can truly respond to one's calling as an engineer and as a mother, wife, *etc.*, joyfully. With a perfect balance of life, one can manage challenges, chaos and obstacles with grace and confidence. A woman can then serve as an engineer for 30 to 40 years in harmony with her other life commitments. ■

Talk on 'Modelling of Undrained Behaviours of Soil in Finite Element Analyses'



by Ir. Chin Yaw Ming

GEOTECHNICAL ENGINEERING TECHNICAL DIVISION

THE talk was delivered by Ir. Dr Chan Swee Huat on 23 February 2010 and was attended by about 20 participants.

Dr Chan defined the conditions of 'Drained' and 'Undrained', and illustrated the parameters used in the undrained stress-strain relation of soil for finite element analyses. He also elaborated, with a few examples, the effective stress paths on a p - q plot for various soil models consisting of (i) linear elastic model, (ii) Mohr-Coulomb model with an undrained shear strength parameter (c_u), (iii) Mohr-Coulomb model with an effective strength parameter (ϕ') and (iv) Cam Clay model in the undrained analyses. The stress paths taken by soil elements were different for these few soil models, resulting in differences in displacements and pore water pressure.

The talk concluded with a caution that a full understanding of the subject matter is required and care must be taken in selecting and using a soil model in the undrained analyses based on the available sub-soil parameters. ■



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