

**Half Day Technical Seminar on “ Steel design in S460 “**

by Ir. Chong Chee Meng

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The Civil and Structural Engineering Technical Division (CSETD) jointly organized a half day seminar on ‘Steel Design in S460’ with ArcelorMittal. The half day seminar was held on 24<sup>th</sup> May 2017 at Armada Hotel. The speakers were Mr. Ted Lee Kok Tien and Mr. Jean-Claude Gerardy, who have conducted many seminars and workshops annually.

This seminar was attended by 52 participants. The 52 participants included engineers from engineering consultants, contracting firms, government agencies and local authorities as well as faculty members from local institutions of higher learning.

The seminar was divided into 2 sessions. In session 1, Mr. Gerardy commenced his talk by briefly explained the overview of S460 structural steel. He introduced the types of steel produced by Arcelor Mittal such as IPE 80-750, HE 100-1000, HL 920-1100, HD 260-400, UB127 – UB1100 and UC152 – UC356 which are British universal beams and columns, W6x4 – W44x16 and W4x4 – W14x16 which are American profiles and merchant bars. Other than British and American sections, the sections also available in accordance with European, Russian and Japanese standards.

Mr. Gerardy continued to elaborate the process evolution in hot-rolled sections from normal rolled, temperature controlled rolling, thermomechanical rolling to advanced thermomechanical rolling. He then introduced Arcelor Mittal latest product HISTAR which stand for High Strength ArcelorMittal Steel. HISTAR steel is produced by quenching and self-tempering process and is available in 2 grades, i.e. HISTAR 355 and HISTAR 460. Mr. Gerardy also explained the mechanical properties of this HISTAR steel and highlighted its advantages.

Mr Gerardy shared with the participants the projects that have used HISTAR 460 steel such as Vietin Bank at Hanoi, Landmark 81 at Ho Chi Minh City, The Imperium at Philippines, Singapore new state court complex, Time Warner Building at Manhattan, etc. Other than buildings, HISTAR 460 also can be used as king post piles for top down construction.



**Figure 1: Presentation of momento by Ir. David Ng to Mr. Gerardy**

Session 2 was presented by Mr. Ted Lee. His presentation is on steel connection. He informed that connections equal to weakened area due to reduce sections. The design of connections is based on the applied forces. The connections must be robust enough to avoid secondary effects and able to develop enough rotation capacity in order to sustain cyclic solicitations.

Mr. Ted Lee clarified that there are 2 types of connections i.e. bolted connections and welded connections. He further explained the characteristic, advantages and disadvantages for both types of connections. Using a diagram, he informed that connections normally required at beam splices, column splices, beam and column connections and lattice nodes. Before ending the talk, he reminded the participants to 'keep it simple' when designing connections and optimize the details precisely in order to minimize problems.

At the end of the talk, there were questions raised by the audience which Mr. Gerardy and Mr. Ted Lee answered and clarified in more detail. At the end of the event, Ir. David Ng thanked the speakers and presented a token of appreciation to them.



**Figure 2: Presentation of momento by Ir. David Ng to Mr. Ted Lee**