



Chi Mei Optoelectronics

Location: Tainan Science-Based Industrial Park, Tainan, Taiwan
Completion: Ongoing



Services Provided

- General Consultation
- Master Planning
- Programming
- Design
- Basis of Design
- Detailed Design
- Construction
- Process Critical Systems
- Structural Engineering
- Electrical Engineering
- Industrial Engineering
- 3D Visualization

Project Elements

- Glass Substrate Manufacturing
- TFT/LCD Display
- LCM/TV
- Class 10 to 1000 Cleanrooms
- Central Utility Plant

Summary

CH2M HILL IDC's relationship with Chi Mei Optoelectronics (CMO) began in early 2002, when CMO was preparing to build a new flat panel fab in Tainan's Science-Based Industrial Park. CMO was impressed by CH2M HILL IDC's ability to add value to their project, using the unique skills inherent in a multi-disciplined approach to facility design and management. That first partnership has led to CH2M HILL IDC performing a continuous string of projects for this leading flat panel producer, including several major production plants and an assembly factory.

Selected Projects

Fab 3, G5 (Cleanroom Area: 80,000m²):

CH2M HILL IDC was the overall general consultant and MEP detail designer for this flat panel facility. The cleanrooms are Class 10 to 1000, occupying more than 80,000m² on three levels of the facility. A central utility plant, process/manufacturing support areas and office buildings are attached. Overall space is over 190,000m² and is designed with AMHS stockers and robots sufficient to operate in a "lights-out" (no operators needed) fashion. Staffing came from offices located in Taiwan, Singapore and the United States. IDC Architects played a key role in the campus master planning as well as some exterior fab design. This very large facility was carefully proportioned by dividing the exterior facade using different materials and shapes. The project took only 97 days to go from its first equipment installation to production and testing of its first TFT/LCD panel.

Fab 4, G5.5 (Cleanroom Area: 120,000m²):

CMO chose CH2M HILL IDC to provide design services, including programming, basis of design and MEP detail design for this extremely large flat panel display production facility. Our team supplied 15 professional design personnel to work on the undertaking, which was the largest fab in the world at the time. The gross area of the building is 300,000m², with 120,000m² devoted to cleanrooms. CH2M HILL IDC furnished early structural packages to ensure a timely kick-off for this fast-track project that took only 6 months to complete.

Fab 6, G7.5 (Cleanroom Area: 140,000m²):

When CMO decided to install a new fab for generation 7.5 TFT/LCD panels, they turned to their trusted partners at CH2M HILL IDC to provide design services including programming, basis of design, process critical systems design and cleanroom design. Having aided CMO with design in the past, CH2M HILL IDC was able to use prior best practices to generate substantial building cost savings. Numerous CH2M HILL IDC disciplines participated in conceptualizing an efficient concept layout for the project, including Industrial Engineering, IDC Architects, Structural Engineers and a flat panel specialist.