GDC_ASHRAE Design

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Vertical UnderFloor

Figure 1 Example data center with VUF cooling architecture

Vertical OverHead

Air Duct With Diffusers

Equipment frame

Air Return

Cold Aisle
Front Aisle

Hot Aisle

Rear Aisle

Cold Aisle

Cable Trays

Hot Aisle
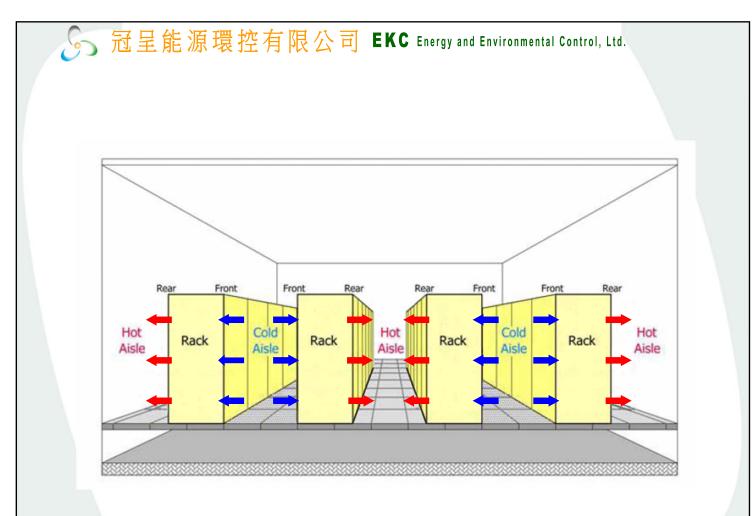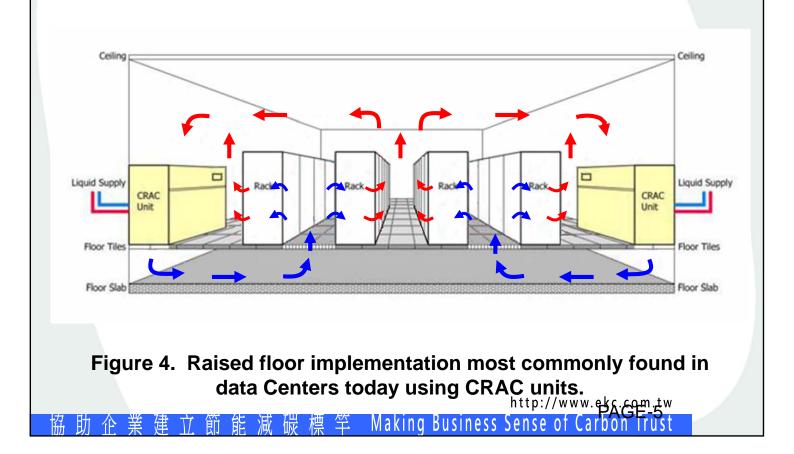
Figure 2. Example data center with VOH cooling architecture

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Rear　Front　Front　Rear　Rear　Front　Front　Rear

Hot Aisle　Rack　Cold Aisle　Rack　Hot Aisle　Rack　Cold Aisle　Rack　Hot Aisle

Figure 3. Hot aisle / cold aisle cooling principle

Figure 4. Raised floor implementation most commonly found in data Centers today using CRAC units.

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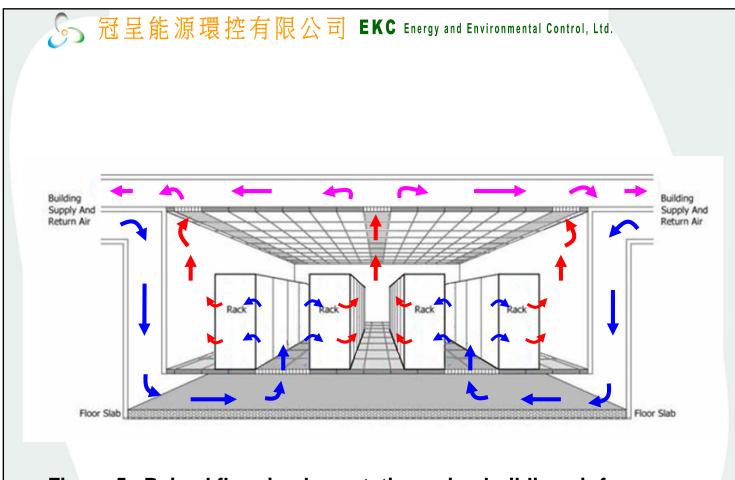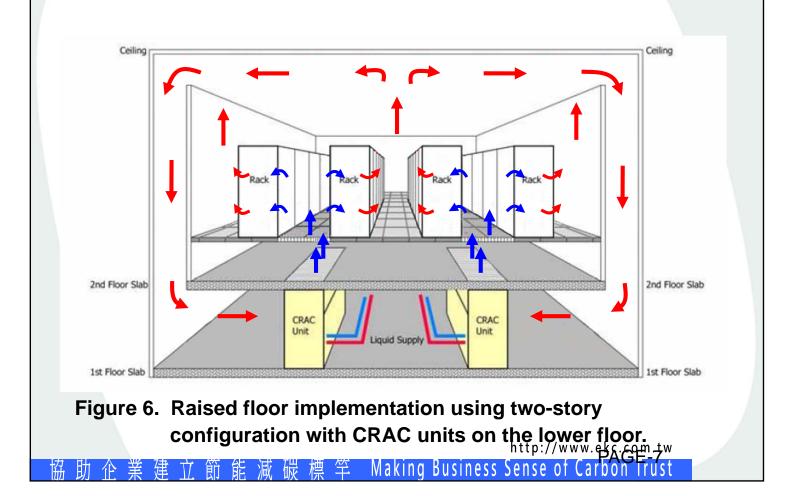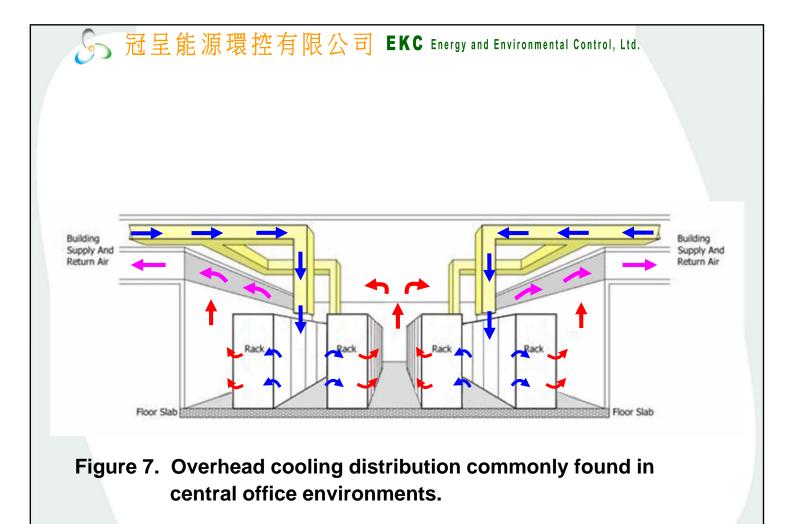冠呈能源環控有限公司 **EKC** Energy and Environmental Control, Ltd.

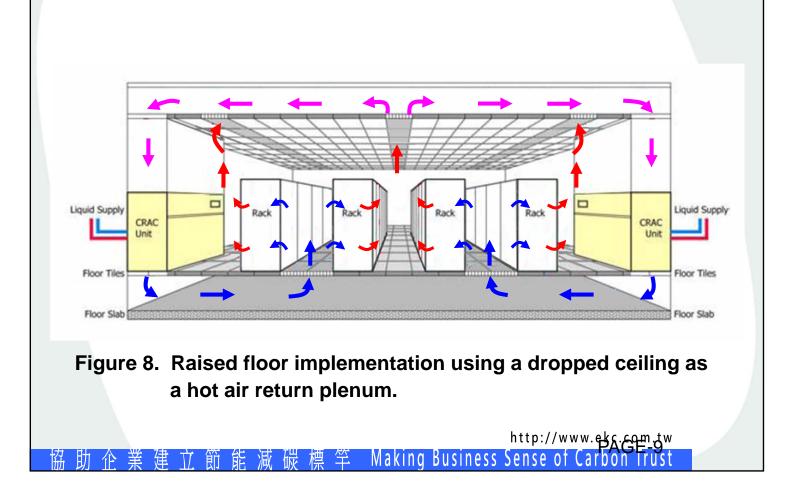**Figure 5. Raised floor implementation using building air from a central plant.**

Figure 6. Raised floor implementation using two-story configuration with CRAC units on the lower floor.

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Figure 7. Overhead cooling distribution commonly found in central office environments.

Figure 8. Raised floor implementation using a dropped ceiling as a hot air return plenum.

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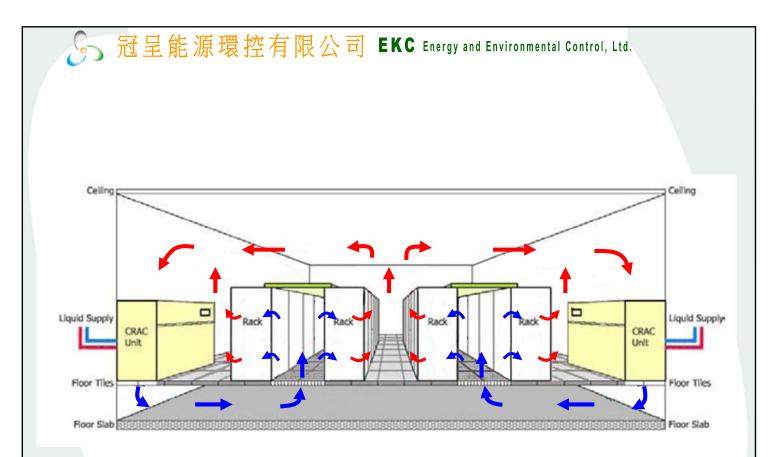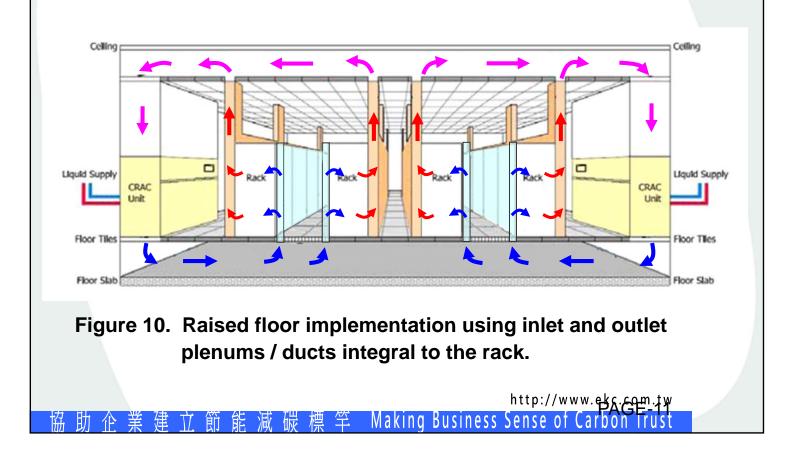冠呈能源環控有限公司　**EKC** Energy and Environmental Control, Ltd.

Figure 9. Raised floor implementation using baffles to limit hot-aisle/cold-aisle "mixing".

Figure 10. Raised floor implementation using inlet and outlet plenums / ducts integral to the rack.

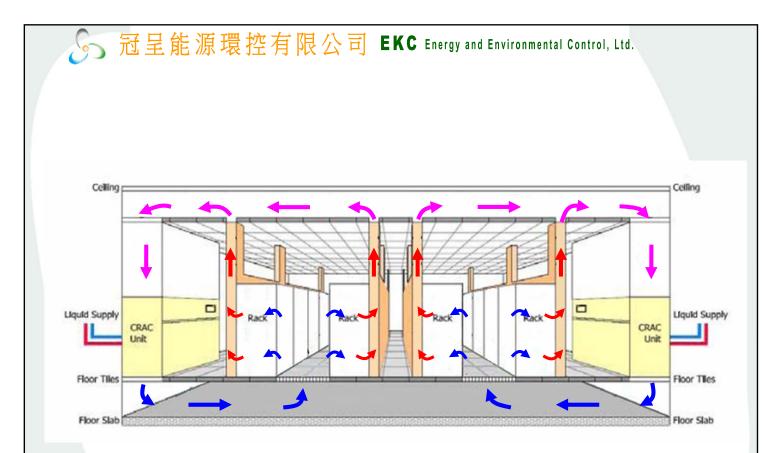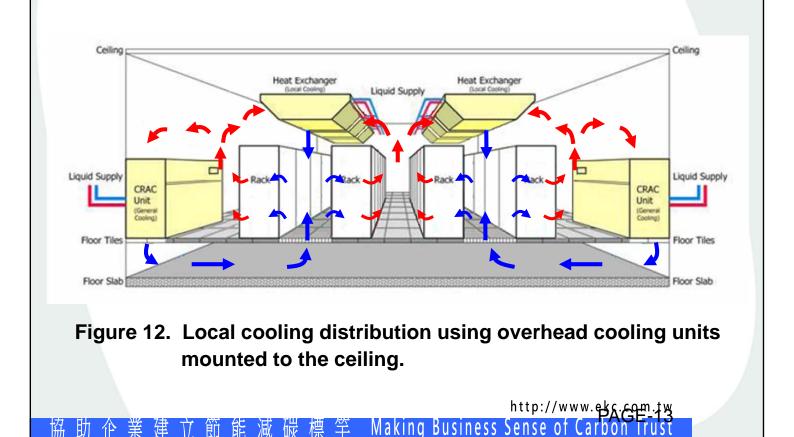冠呈能源環控有限公司　**EKC** Energy and Environmental Control, Ltd.

Figure 11. Raised floor implementation using outlet plenums / ducts integral to the rack.

Figure 12. Local cooling distribution using overhead cooling units mounted to the ceiling.

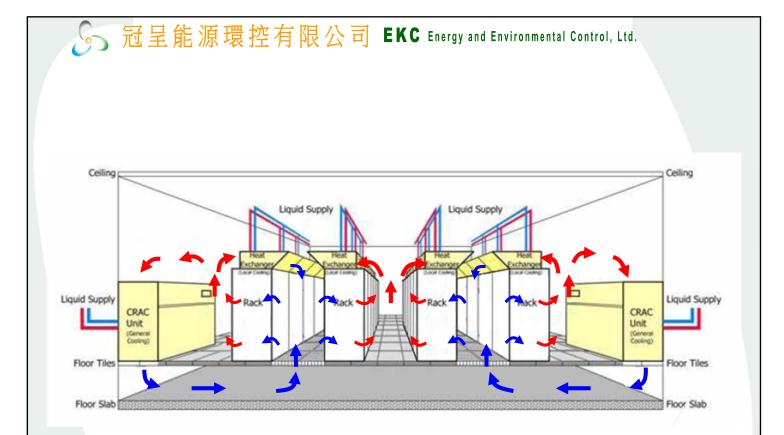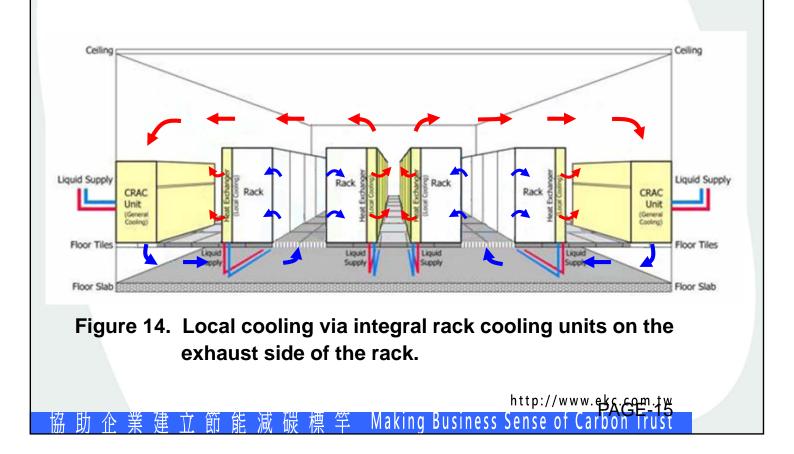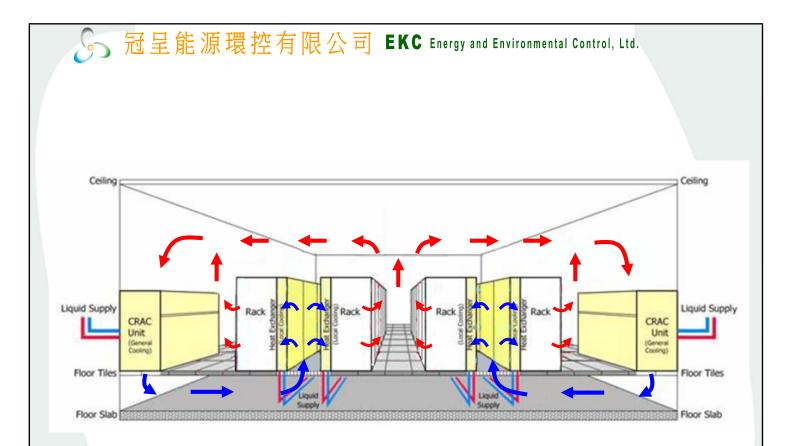冠呈能源環控有限公司 **EKC** Energy and Environmental Control, Ltd.

Figure 13. Local cooling distribution using overhead cooling units mounted to the ceiling.

Figure 14. Local cooling via integral rack cooling units on the exhaust side of the rack.

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Figure 15. Local cooling via integral rack cooling units on the inlet side of the rack.

Figure 16. Internal liquid cooling loop restricted within rack extent.

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