Supervision & Testing on Electrical System

29 Apr 2016

Principal Engineer Cheong Weng Yip

Development & Construction Productivity Department

Building Quality Group

Housing & Development Board

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Consultant's Supervision

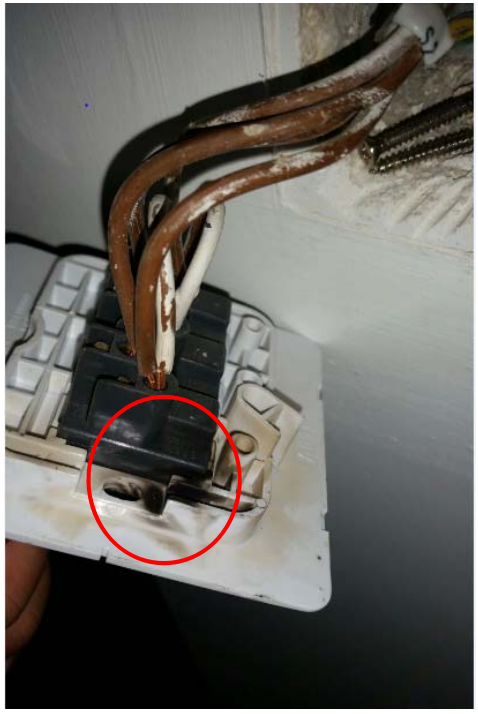
- Have Experienced Personnel to check electrical work periodically at site.
- Observant and vigilant on electrical work quality during site visit.
- Pay more attention to
  - Contractors not familiar with HDB's electrical system.
  - Contractors with poor performance.
  - Newly implemented electrical requirements .
- Provide feedback to Design Team for improvement.

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Electrical Safety

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Burnt Cables in CCU and Outlet





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Audit Test on Cable Connection

Current SOP

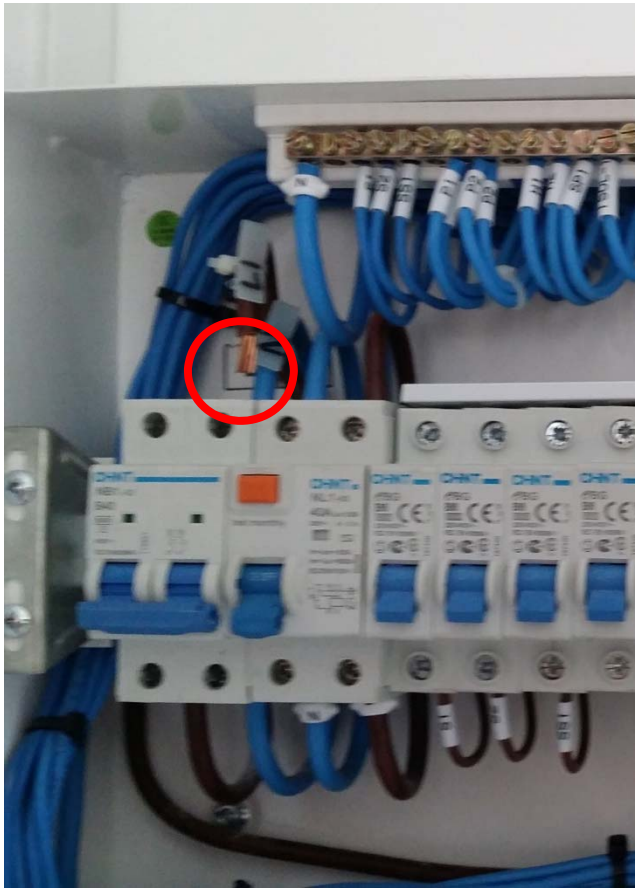
- Contractor to submit application for audit test, together with LEW's declaration that all cables within dwelling units have been tightened and in order after having passed Unit test.
- TM(M&E) to carry out random audit (10% of the total units at the block) to verify the cables have been tightened.



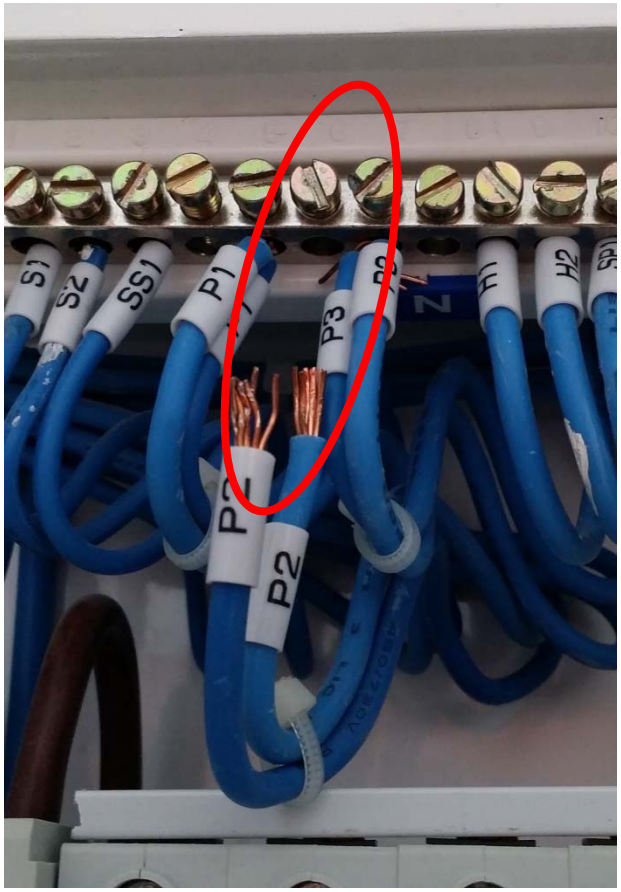


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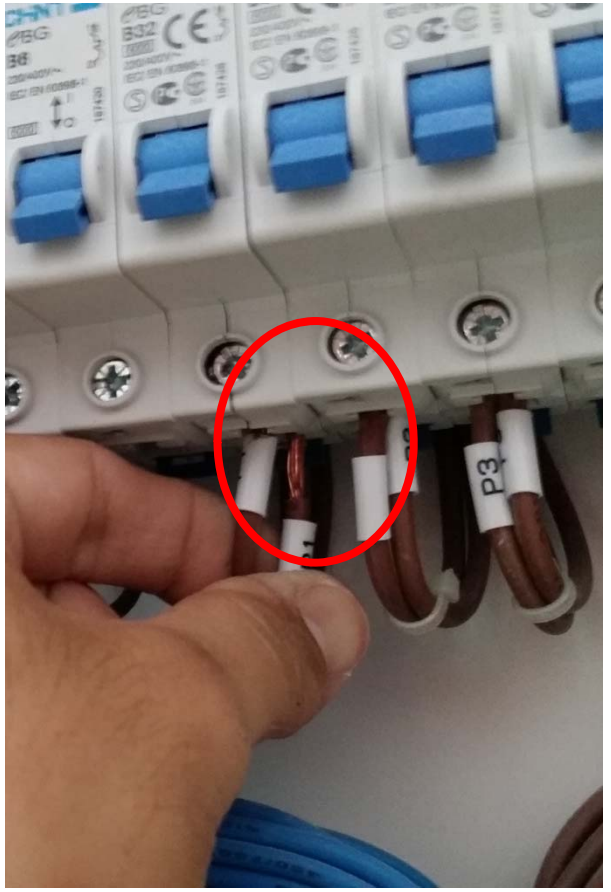
Some Examples of Audit Test Results



Exposed live cable



Cables not tightened

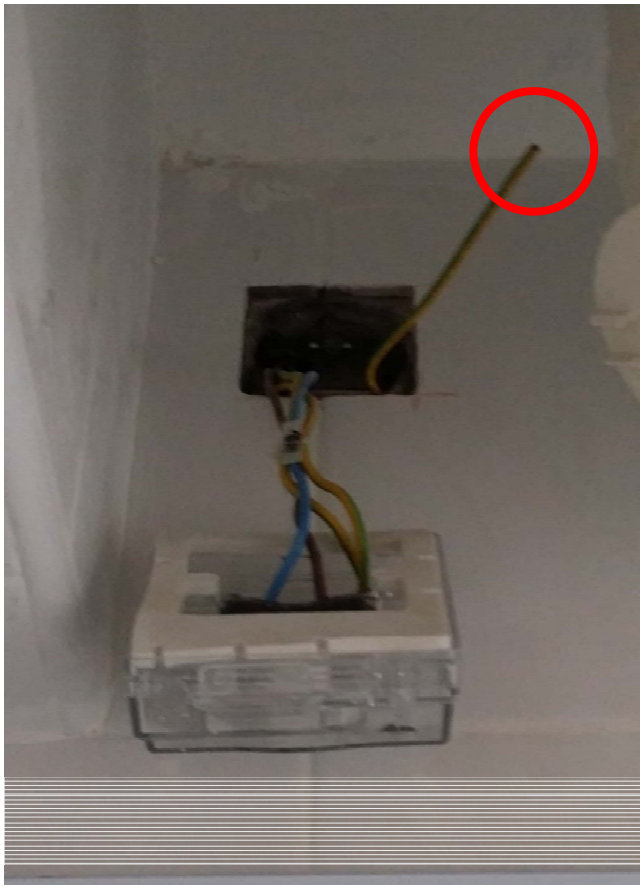


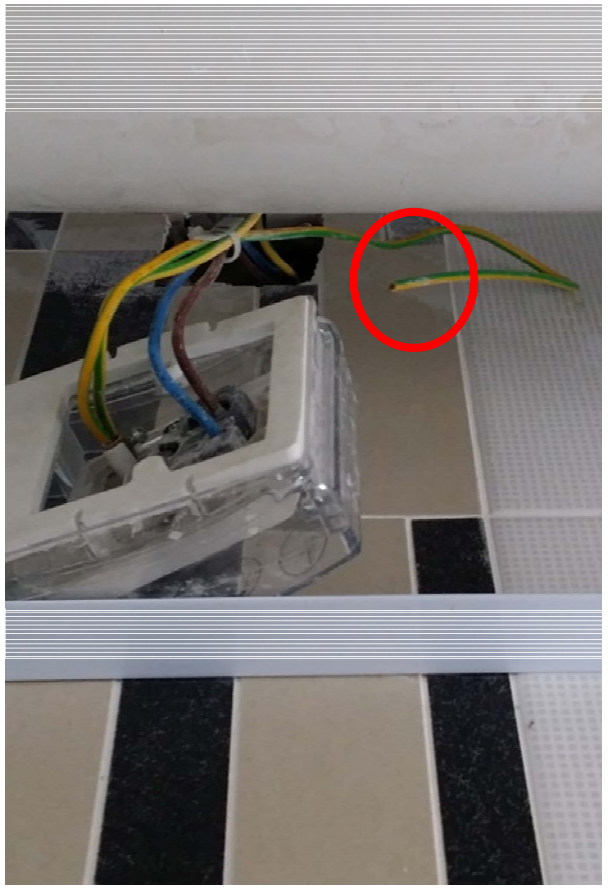
Cables not properly terminated

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Some Examples of Audit Test Results







Cable insulation not removed

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Audit Test on Cable Connection

Proposal to enhance the SOP

- Contractor to submit application for audit test, together with LEW's declaration and endorsement by Consultant that all cables within dwelling units have been tightened and in order after having passed Unit test.
- TM(M&E) to carry out random audit (10% of the total units at the block) to verify the cables have been tightened.





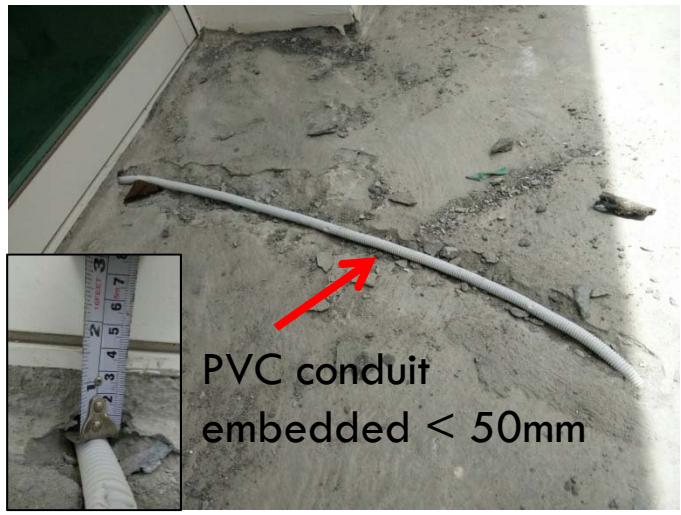
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Non-Compliance

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Concealed PVC Conduit

- Embedded PVC conduit in floor slab not in accordance with CP 5.
- Method of rectification incorrect.
- Rectified using G.I. conduit.

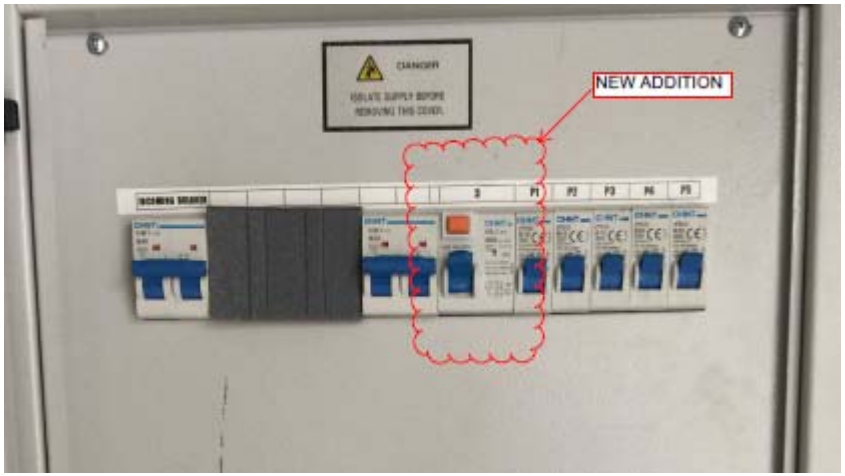




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Power Circuit without RCD Protection

- Installation of power circuit without RCD protection.



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Caution label for Multiple AC circuit supply

- SPSL imposed requirement of displaying caution label on switches with different circuits.
- Caution label to be provided under the cover for completed installation.
- To review the design so as to avoid different circuits for same switch. To provide separate switch if cannot be avoided.





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Ingress Protection rating in Balcony

- Non-weatherproof cover for 13A socket outlet at balcony.
- Ceiling above balcony unable to provide adequate weather protection.
- To provide 13A socket outlet with weatherproof protection.







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Non-compliance with COPIF 2013

- Requires RJ45 outlet for residential flat.
- RJ 11 outlet was provided instead in Household Shelter despite reminder given during Sample Unit Inspection.
- To check all outlets are RJ45.



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Meter below Water Pipe Joint

- Co-ordination between M&E work.
- To indicate ingress of water pipe during sample unit inspection.







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To note

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Testing of Data Outlet

- Inaccurate signal readings if outlet is not secured to the box.





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Electrical Testing

- Monitor closely the contractors who are not familiar with HDB's electrical system and with poor performance.
- Witness electrical test.
- Satisfied with the test result of the installation.
- System compatibility test on telecommunication installation for Sample Unit.

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THANK YOU

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