

22 January 2009

To : All Authorized Persons
Registered Structural Engineers
Registered Geotechnical Engineers
Registered General Building Contractors
Registered Specialist Contractors

Dear Sir/ Madam,

Proper Operation and Maintenance of Man-made Water System for Prevention of Legionnaires' Disease

Recently, a man was affected by Legionnaires' Disease (LD) after using spa pool (whirlpool) in a private clubhouse. Investigations by the Centre for Health Protection (CHP) of the Department of Health (DH) confirmed positive growth of *Legionella pneumophila*, a type of bacteria causing LD, in water sample taken at the clubhouse's spa pool (whirlpool).

DH advises that *Legionella pneumophila* survives and multiplies in natural fresh water, including lakes, rivers, streams, ponds, mud and soil, as well as man-made water systems. The optimum temperature for proliferation of the bacteria is around 20°C to 45°C, and particularly in the range of 35°C to 43°C. Proliferation ceases above 46°C and below 20°C, while the survival time decreases to a few minutes at above 60°C. At 70°C the organism is killed virtually instantaneously. Transmission of the bacteria to the human body is mainly by inhalation of airborne droplets (i.e. aerosols) or particles in fine mist containing the bacteria into the lungs where they are deposited. Death may occur in severe cases. You are advised to visit CHP website at http://www.chp.gov.hk/content.asp?lang=en&info_id=2117&id=24&pid=9 for more information on LD.

DH also advises that in previous reported cases of LD, sources of aerosols causing an outbreak were mainly traced to water systems in buildings including evaporative cooling towers and humidifiers of air-conditioning systems, hot and cold water services, whirlpool spas, industrial heating and cooling processes, etc. Normal range of operation temperature of these systems is conducive to the growth of *Legionellae*. To minimize LD risk, these man-made water systems should be properly designed, operated and maintained. Such systems include cooling towers, air handling

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unit/ fan coil unit of air-conditioning systems, air washers, humidifiers, hot/ cold water systems, architectural fountains, spa pools, swimming pools and misting devices. The recent case highlights the importance of adequate maintenance (including disinfection) of Jacuzzi and spa pool waters.

I am writing to solicit your assistance in paying special attention to proper operation and maintenance of these man-made water systems in buildings under your purview for prevention of LD. You may refer to and follow the Code of Practice published by the Prevention of Legionnaires' Disease Committee, Hong Kong in 2007. Information about good practices to be followed in the design, installation, operation and maintenance of the man-made water systems can be found in the Code which could be downloaded from the website of the Electrical and Mechanical Services Department:

http://www.emsd.gov.hk/emsd/e_download/pps/COP-PLD_E_Final_20071204.pdf

Yours faithfully,

A handwritten signature in black ink, consisting of several overlapping loops and strokes, positioned centrally below the text 'Yours faithfully,'.

(HUI Siu-wai)
for Director of Buildings