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See **Distribution**

Dear Sir/Madam

SUBMISSION REQUIREMENTS FOR MECHANISED CAR PARKING SYSTEMS UNDER THE BUILDING CONTROL ACT

Objective

This circular is to inform the industry on the submission requirements for Mechanised Car Parking Systems (MCPS). For the avoidance of doubt, this circular is to be read together with the 21 Feb 2011 joint LTA/BCA/URA circular¹ and the 21 May 2013 circular² and supersedes all other representations (whether in writing or otherwise), made or that may have been made by BCA and its officers, for and on behalf of the Commissioner of Building Control.

MCPS that require approval of plans and permit

2 MCPS that comprise supporting steel frames, with or without its own foundation system, are considered as building structures requiring approval of plans and permit under the Building Control Act. Some examples of such systems are as shown in Annex A. The mechanical aspects of the system (e.g. rollers, chains, wire-ropes, motors, pulleys, hydraulic system, etc) are not subject to approval of plans and permit under the Building Control Act for the purposes of construction of the MCPS.

¹ Circular No – URA/PB/2011/04-DCG

² Circular Reference No - BCA BC 15.0.3

Structural design of MCPS

3 Qualified Persons for structural works (QPs) are reminded that the structural design of the supporting steel frames of MCPS shall comply with the latest version of Eurocode 3 (SS EN1993), and the Design Guide on the Alternative Use of Structural Steel to BS 5950 and Eurocode 3 (BC1). In addition, action due to the horizontal loading acting on the steel frames caused by the movement of cars is to be considered in the structural design. This is similar to the horizontal surge loading for the design of supporting steel member for gantry crane structures. QPs can refer to “Annex A of BS EN 14010: 2003 – Safety of machine – Equipment for power driven parking of motor vehicles – Safety and EMC requirements for design, manufacturing, erection and commissioning stages”, that provides design guidance on the horizontal loading acting on the steel frames induced by the movement of cars.

Requirement on safety from falling

4 As the MCPS consist of moveable parts, the requirements for safety from falling under the Building Control Regulations will be applicable for the following situations:

- a) If the vehicle is parked on a platform where a difference in level of 1.0 m or more exists; and
- b) If a person is required to access the platform to pick up the vehicle.

Requirement on provision of accessible parking lots

5 Accessible parking lots must be provided in developments where MCPS are proposed. It shall comply with the requirements stipulated in the Code on Accessibility in the Built Environment. Where the accessible parking lots cannot be provided in the MCPS, surface car parking lots shall be provided in lieu.

Periodic structural inspection

6 Where the periodic structural inspection of a building is carried out, the professional engineer carrying out the inspection is to include the MCPS structure in the list of structures that he checks.

MCPS that do not require approval of plans and permit

7 If the mechanised car parking system comprises a stand-alone single-car platform lifting mechanism, examples of which are as shown in Annex B, approval of plans is not required as it is considered a lifting equipment, similar to those used in car workshops.

Requirement on car lifts which convey driver/passengers

8 A MCPS is distinguished from a car lift in that a car lift is intended to convey vehicles together with driver and/or passengers during operation. In this respect, car lifts must be designed to comply with SS 550:2009 – Code of Practice for Installation, Operation and Maintenance of Electric Passenger and Good Lifts, as required under the Building Control Regulations. Such car lifts must be regularly maintained to ensure the safe operation of the lift as specified under the Building Maintenance and Strata Management (Lift and Building Maintenance) Regulations.

9 I would appreciate it if you could bring to the attention of your members the contents of this circular. Please contact Er. Chang Heng Choy at Tel: 6804 4646 or email: chang_heng_choy@bca.gov.sg, if you need further clarification.

Yours faithfully



LUNG HIAN HAO
DIRECTOR
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for COMMISSIONER OF BUILDING CONTROL
BUILDING AND CONSTRUCTION AUTHORITY

ANNEX A: EXAMPLES OF MECHANISED CAR PARKING SYSTEMS THAT REQUIRE APPROVAL OF PLANS



Figure A1 - Structural frame within a building



Figure A2 – Structural frame within a building



Figure A3 - Structural frame within a building



Figure A4 - Structural frame within a building



Figure A5 - Structural frame within a building



Figure A6 - Standalone structural frame

ANNEX B: EXAMPLES OF MECHANISED CAR PARKING SYSTEMS THAT DO NOT REQUIRE APPROVAL OF PLANS



Figure B1 – Standalone lifting system for a single car within a building

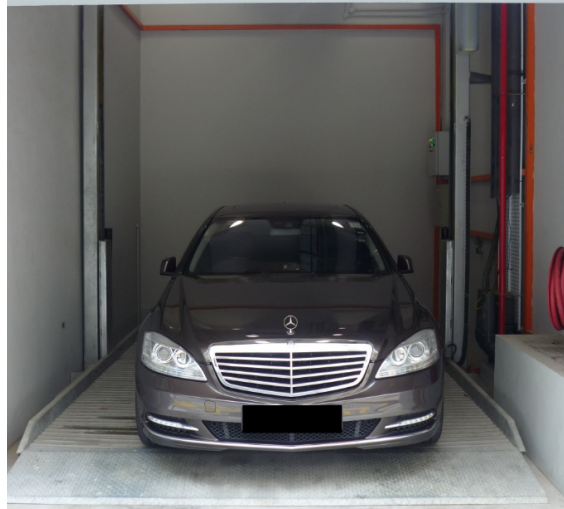


Figure B2 – Lifting system for a single car within a building

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