
First published in the Government *Gazette*, Electronic Edition, on 29 June 2022 at 5 pm.

No. S 506

BUILDING CONTROL ACT 1989

BUILDING CONTROL (BUILDABILITY AND PRODUCTIVITY) (AMENDMENT NO. 2) REGULATIONS 2022

In exercise of the powers conferred by section 49 of the Building Control Act 1989, the Minister for National Development makes the following Regulations:

Citation and commencement

1. These Regulations are the Building Control (Buildability and Productivity) (Amendment No. 2) Regulations 2022 and come into operation on 30 June 2022.

Amendment of regulation 2

2. In regulation 2 of the Building Control (Buildability and Productivity) Regulations 2011 (G.N. No. S 199/2011) (called in these Regulations the principal Regulations) —

(a) after the definition of “industrial building”, insert —

““integrated digital delivery”, in relation to any building works, means the use of digital technology by any of the following persons to enable the digital integration of work processes in respect of the building works:

- (a) the developer of the building works;
- (b) a builder appointed under section 8(1)(c) of the Act in respect of the building works;
- (c) a qualified person appointed under section 8(1)(a) or 11(1)(d)(i) of the Act in respect of the building works;

“integrated digital delivery implementation plan” means a plan (of the building works of a building) that describes the types, extent of use and details of the integrated digital delivery essential use cases mentioned in regulation 3A(1) to be adopted in respect of the building works, for the purpose of enabling the digital integration of work processes;”;

(b) after the definition of “office building”, insert —

““prefabricated architectural system” means a wall system or component (including finishes for walls) that is —

(a) manufactured or constructed outside the premises of the building works; and

(b) then installed in a building under building works;”;

(c) after the definition of “prefabricated bathroom unit”, insert —

““prefabricated mechanical, electrical or plumbing system” means a mechanical, electrical or plumbing component or equipment that is —

(a) manufactured or assembled in an accredited fabrication facility in accordance with an accredited fabrication method; and

(b) then installed in a building under building works;”;

(d) after the definition of “prefabricated prefinished volumetric construction”, insert —

““prefabricated structural system” means a structural system or component that —

(a) comprises any combination of beams, columns and slabs;

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- (b) is manufactured or constructed outside the premises of the building works; and
 - (c) is then installed in a building under building works;”;
- (e) after the definition of “specified person”, insert —
- ““specified prefabricated structural system” means any or any combination of the following:
- (a) a prefabricated structural system known as advanced precast concrete system where concrete components (comprising at least 2 precast concrete elements that are integrated together) are —
 - (i) constructed or manufactured outside the premises of the building works; and
 - (ii) then installed in a building under building works by being affixed with mechanical connections to other concrete components;
 - (b) a prefabricated structural system using a product known as mass engineered timber that is —
 - (i) made of wood engineered to improve its structural integrity over its natural form;
 - (ii) constructed or manufactured outside the premises of the building works; and
 - (iii) then installed in a building under building works;

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- (c) prefabricated prefinished volumetric construction;
 - (d) structural steel construction;
 - (e) any other prefabricated structural system that the Commissioner of Building Control may approve;”; and
 - (f) after the definition of “submission requirements”, insert —
 - ““super-structural works” means structural works carried out in respect of the ground floor and all floors above the ground floor;
 - “system formwork” means any framing, mould, support or surface that is —
 - (a) prefabricated and modularised outside the premises of the building works; and
 - (b) then assembled at those premises for the purpose of defining the shape of concrete until the concrete is self-supporting;”.

New regulation 3A

3. After regulation 3 of the principal Regulations, insert —

“Integrated digital delivery essential use cases

3A.—(1) The integrated digital delivery essential use cases mentioned in regulations 2 (definition of “integrated digital delivery implementation plan”) and 4B(8), to be adopted in relation to building works of a building, are the following:

- (a) to use digital technology to request information or facilitate communication, in relation to any issue arising from the building works;
- (b) to conduct an integrated concurrent engineering meeting in relation to the building works using digital technology and BIM;

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- (c) to utilise a BIM model, a digital 3 dimensional model or an immersive technology to visualise, seek feedback about and validate the design of the building;
 - (d) to use digital technology to submit and obtain approval relating to the design of the building or any component involved in the building works;
 - (e) to prepare documents relating to the building works based on information primarily generated from a BIM model;
 - (f) to estimate costs at various stages of the building works based on information generated from a BIM model;
 - (g) to use digital technology to plan the prefabrication production schedule of the building works, and digitally track and monitor the production, delivery and installation of prefabricated components;
 - (h) to use digital scheduling to plan and monitor the construction activities of the building works;
 - (i) to use digital solutions or digital scanning to track and monitor the progress of the building works;
 - (j) to use digital solutions to record the observations from site inspections of the building works and track the necessary follow-up actions taken;
 - (k) to use digital checklists or digital dashboards to manage and track the defects of the building works and the rectification of those defects;
 - (l) to use digital technology to generate and digitally hand over —
 - (i) a digital model of a physical asset that is built as part of the building works; and
 - (ii) any other documents relating to the physical asset, including but not limited to the following:

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- (A) the as-built records;
 - (B) the manufacturer’s specifications and warranties;
 - (C) the operation and maintenance manuals;
 - (m) to set up a digital platform to integrate other technologies to perform the operations or maintenance of a physical asset that is built as part of the building works;
 - (n) to set up a digital platform to monitor the real-time performance and track the key operating parameters of a physical asset that is built as part of the building works.

(2) In this regulation, “building information modelling” or “BIM”, in relation to a building, means a digital representation of the physical or functional characteristics of the building.”.

Amendment of regulation 4B

4. In regulation 4B of the principal Regulations —

- (a) in paragraph (1), replace “paragraph (2), (3), (3A), (4), (4A), (5) or (6)” (wherever it appears) with “paragraph (2), (3), (3A), (3B), (4), (4A), (4B), (4C), (5), (6), (7) or (8)”;
- (b) in paragraph (3A), after “1 May 2017”, insert “but before 30 June 2022”;
- (c) after paragraph (3A), insert —
 - “(3B) Where the relevant building works relate to any building to be built for use as an industrial building on any State land that is sold under the Government Land Sales Programme on or after 30 June 2022, the building must incorporate the minimum level of use of —
 - (a) prefabricated architectural systems;
 - (b) prefabricated mechanical, electrical or plumbing systems;

(c) prefabricated structural systems; and

(d) system formwork,

specified in Part 3 of the Fourth Schedule.”;

(d) in paragraph (4), after “1 November 2014”, insert “but before 30 June 2022”;

(e) in paragraph (4A), after “1 September 2018”, insert “but before 30 June 2022”;

(f) after paragraph (4A), insert —

“(4B) Where the relevant building works relate to any building to be built for use as a residential (non-landed) building on any State land that is sold under the Government Land Sales Programme on or after 30 June 2022, and that land is situated wholly or partly within the area described in the Eleventh Schedule —

(a) the building or the component of the building that is a residential (non-landed) building (as the case may be) must incorporate the minimum level of use of —

(i) prefabricated mechanical, electrical or plumbing systems;

(ii) prefabricated prefinished volumetric construction; and

(iii) system formwork,

specified in the Twelfth Schedule;

(b) the prefabricated mechanical, electrical or plumbing systems that are used must conform to the requirements set out in the Code of Practice in relation to prefabricated mechanical, electrical or plumbing systems; and

(c) the prefabricated prefinished volumetric construction that is used must conform to

the requirements set out in the Code of Practice in relation to prefabricated prefinished volumetric construction.

(4C) Where the relevant building works relate to any building to be built for use as a hotel building on any State land that is sold under the Government Land Sales Programme on or after 30 June 2022, and that land is situated wholly or partly within the area described in the Thirteenth Schedule —

(a) the building, or the aggregate of the component of the building that is a hotel building and the component of the building that is a residential (non-landed) building (as the case may be) must incorporate the minimum level of use of —

(i) prefabricated mechanical, electrical or plumbing systems;

(ii) prefabricated prefinished volumetric construction; and

(iii) system formwork,

specified in the Twelfth Schedule;

(b) the prefabricated mechanical, electrical or plumbing systems that are used must conform to the requirements set out in the Code of Practice in relation to prefabricated mechanical, electrical or plumbing systems; and

(c) the prefabricated prefinished volumetric construction that is used must conform to the requirements set out in the Code of Practice in relation to prefabricated prefinished volumetric construction.”;

(g) in paragraph (6), after “15 December 2017”, insert “but before 30 June 2022”; and

(h) after paragraph (6), insert —

“(7) Where the relevant building works relate to any building to be built on any State land that is sold under the Government Land Sales Programme on or after 30 June 2022, and that land is situated wholly or partly within the area described in the Fourteenth Schedule —

- (a) the building works must be carried out in accordance with the approved productivity concept implementation plan for those building works;
- (b) the building works must incorporate the minimum level of use of —
 - (i) prefabricated architectural systems;
 - (ii) prefabricated mechanical, electrical or plumbing systems;
 - (iii) specified prefabricated structural systems;
 - (iv) system formwork;specified in the Fifteenth Schedule; and
- (c) the prefabricated mechanical, electrical or plumbing systems that are used must conform to the requirements set out in the Code of Practice in relation to prefabricated mechanical, electrical or plumbing systems.

(8) Where the relevant building works relate to any building to be built on any State land that is sold under the Government Land Sales Programme on or after 30 June 2022 —

- (a) the building works must adopt any 5 of the integrated digital delivery essential use cases mentioned in regulation 3A(1); and

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- (b) the adoption of the integrated digital delivery essential use cases must be in accordance with the requirements set out in the Code of Practice in relation to integrated digital delivery.”.

Amendment of regulation 5B

5. In regulation 5B of the principal Regulations —

(a) in paragraph (1), after “regulation 4B(6)”, insert “or (7)”;
and

(b) in paragraph (2), replace sub-paragraph (b) with —

“(b) the level of use of —

- (i) buildable features;
- (ii) offsite finishes;
- (iii) prefabricated architectural systems;
- (iv) prefabricated mechanical, electrical or plumbing systems; and
- (v) specified prefabricated structural systems,

for the proposed construction system;”.

New regulation 5C

6. After regulation 5B of the principal Regulations, insert —

“Submission of integrated digital delivery implementation plan for approval

5C.—(1) For the purposes of section 5(1) of the Act, the plans of building works mentioned in regulation 4B(8) for which an application for approval is to be made to the Commissioner of Building Control must include the integrated digital delivery implementation plan.

(2) The integrated digital delivery implementation plan must include the following:

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- (a) the details of the 5 integrated digital delivery essential use cases mentioned in regulation 3A(1) that are to be adopted in respect of the building works;
 - (b) such other documents or information as may be required by the Commissioner of Building Control.”.

Amendment of regulation 11A

7. In regulation 11A(1) of the principal Regulations, after “regulation 4B(6)”, insert “or (7)”.

New regulation 11B

8. After regulation 11A of the principal Regulations, insert —
- “Departure and deviation from approved integrated digital delivery implementation plans**

11B.—(1) Despite regulation 18 of the Building Control Regulations 2003, any person who wishes to make any change to the integrated digital delivery implementation plan of any building works mentioned in regulation 4B(8) must apply to the Commissioner of Building Control under section 5A(1) of the Act.

(2) The application mentioned in paragraph (1) must be accompanied by the amended integrated digital delivery implementation plan showing clearly the departures or deviations.”.

Amendment of Fourth Schedule

9. In the Fourth Schedule to the principal Regulations —
- (a) replace the Schedule reference with —
“Regulation 4B(3), (3A) and (3B)”;
 - (b) in Part 2, in the Part heading, after “1 MAY 2017”, insert “BUT BEFORE 30 JUNE 2022”; and

(c) after Part 2, insert —

“PART 3

MINIMUM LEVEL OF USE OF PREFABRICATED
SYSTEMS FOR BUILDINGS SOLD UNDER THE
GOVERNMENT LAND SALES PROGRAMME ON OR
AFTER 30 JUNE 2022

1. The minimum level of use for each of the prefabricated systems mentioned in the first column is set out in the second column:

<i>First column</i>	<i>Second column</i>		
	<i>For buildings with a gross floor area that is less than 5,000 square metres</i>	<i>For buildings with a gross floor area that is equal to or more than 5,000 square metres but less than 25,000 square metres</i>	<i>For buildings with a gross floor area that is equal to or more than 25,000 square metres</i>
(a) Prefabricated architectural systems in respect of the total wall length of the building works	0%	70%	80%
(b) Prefabricated mechanical, electrical or plumbing systems in respect of the total qualifying area in the development as specified in the Code of Practice	0%	40%	50%

(c) Prefabricated structural systems in respect of the total structural floor area of the building works	0%	30%	60%
(d) System formwork in respect of the total cast-in-place area of super-structural works	0%	70%	70%

Amendment of Fifth Schedule

10. In the Fifth Schedule to the principal Regulations, delete items 31, 43, 45 and 47.

Amendment of Seventh Schedule

11. In the Seventh Schedule to the principal Regulations, delete item 2.

Amendment of Ninth Schedule

12. In the Ninth Schedule to the principal Regulations, delete items 2 and 6.

Amendment of Tenth Schedule

13. In the Tenth Schedule to the principal Regulations, delete item 2.

New Eleventh to Fifteenth Schedules

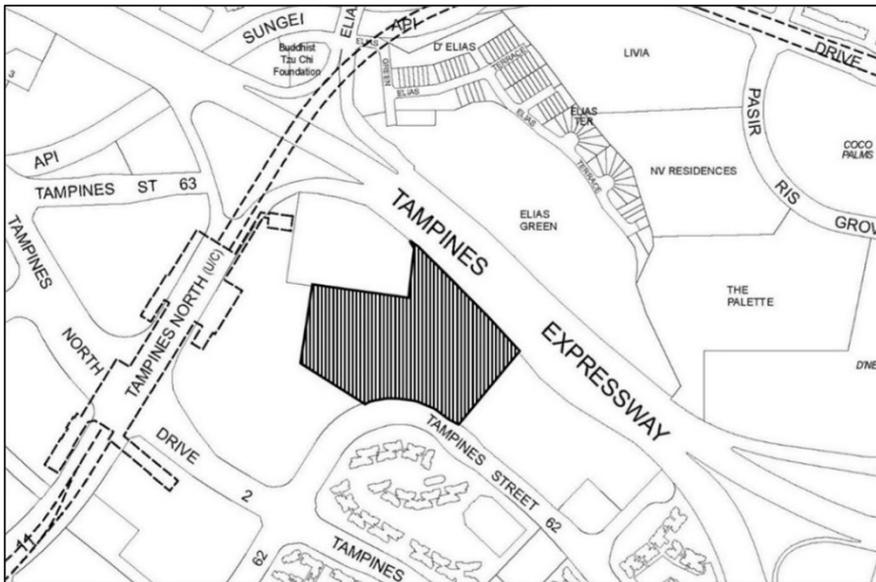
14. After the Tenth Schedule to the principal Regulations, insert —

“ELEVENTH SCHEDULE

Regulation 4B(4B) and Twelfth
Schedule

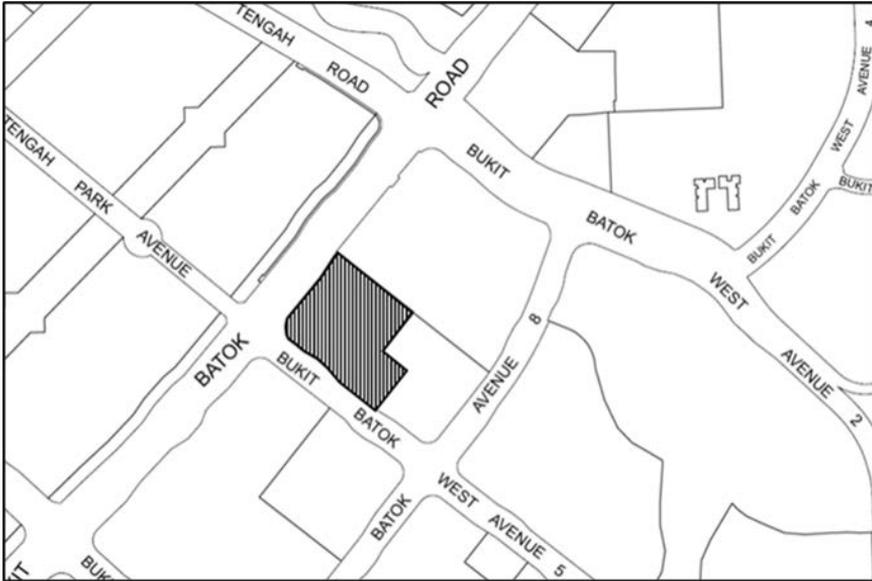
1. Shaded area in Map 1 at Tampines Street 62 (Parcel B)

MAP 1



2. Shaded area in Map 2 at Bukit Batok West Avenue 5

MAP 2



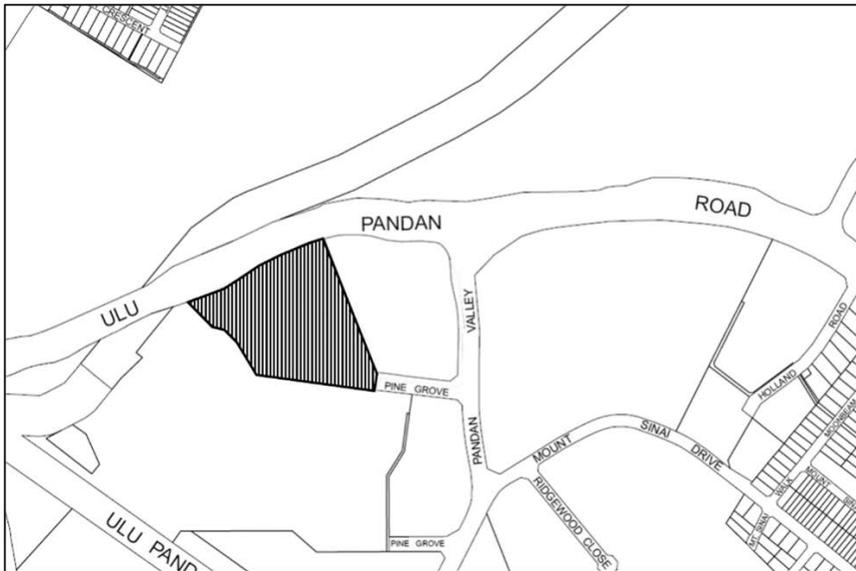
3. Shaded area in Map 3 at Lentor Gardens

MAP 3



4. Shaded area in Map 4 at Pine Grove (Parcel B)

MAP 4



TWELFTH SCHEDULE

Regulation 4B(4B) and (4C)

MINIMUM LEVEL OF USE OF PREFABRICATED MECHANICAL, ELECTRICAL OR PLUMBING SYSTEMS, PREFABRICATED PREFINISHED VOLUMETRIC CONSTRUCTION AND SYSTEM FORMWORK FOR BUILDINGS ON LAND SITUATED WITHIN AREA DESCRIBED IN ELEVENTH SCHEDULE OR THIRTEENTH SCHEDULE

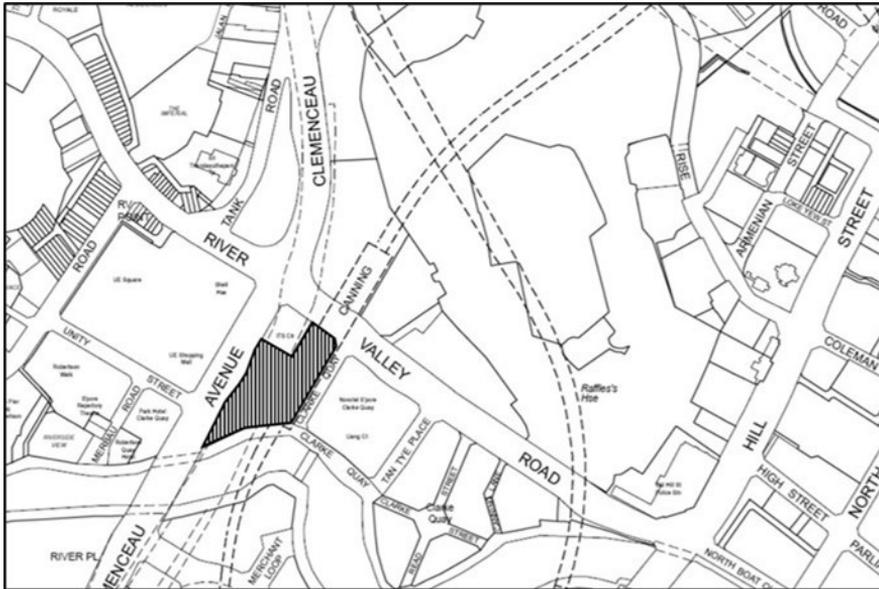
1. The minimum level of use of prefabricated mechanical, electrical or plumbing systems is 65% of the total qualifying area in the development as specified in the Code of Practice.
2. The minimum level of use of prefabricated prefinished volumetric construction is 65% of the total super-structural floor area.
3. The minimum level of use of system formwork is 70% of the total cast-in-place area of super-structural works.

THIRTEENTH SCHEDULE

Regulation 4B(4C) and Twelfth
Schedule

- 1. Shaded area in Map 1 at River Valley Road

MAP 1

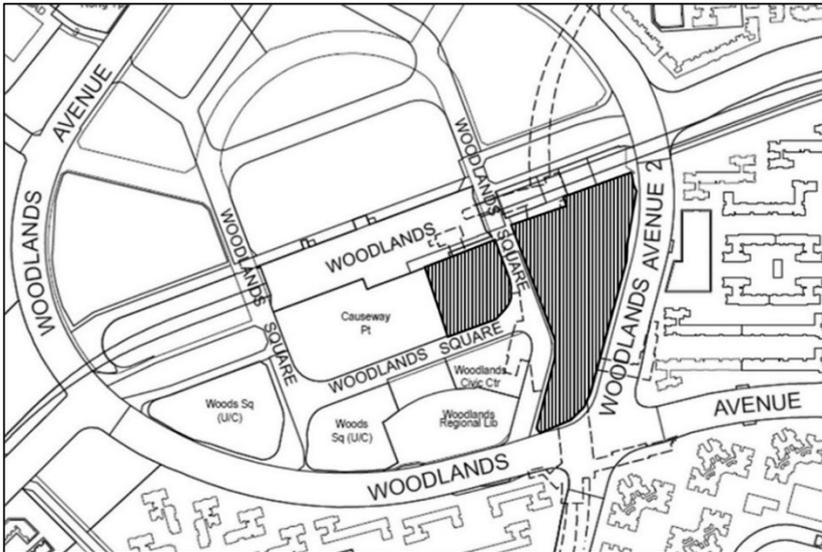


FOURTEENTH SCHEDULE

Regulation 4B(7) and Fifteenth
Schedule

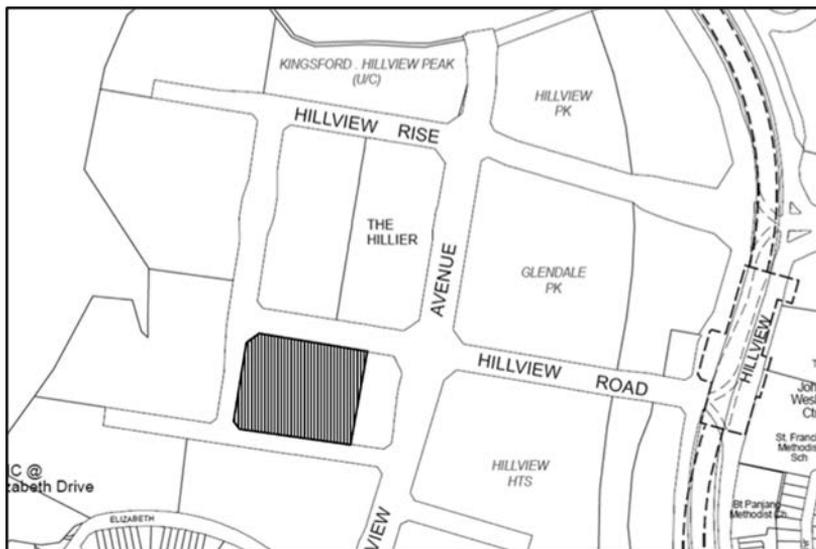
1. Shaded area in Map 1 at Woodlands Avenue 2

MAP 1



2. Shaded area in Map 2 at Hillview Rise

MAP 2



3. Shaded area in Map 3 at Lentor Hills Road (Parcel B)

MAP 3



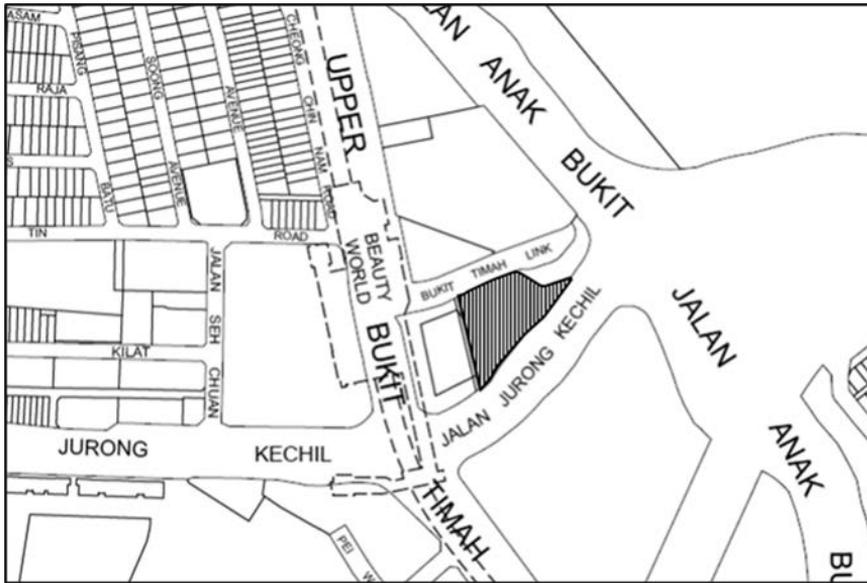
4. Shaded area in Map 4 at Lentor Central

MAP 4



5. Shaded area in Map 5 at Bukit Timah Link

MAP 5



FIFTEENTH SCHEDULE

Regulation 4B(7)

MINIMUM LEVEL OF USE OF SPECIFIED PREFABRICATED STRUCTURAL SYSTEMS, PREFABRICATED ARCHITECTURAL SYSTEMS, PREFABRICATED MECHANICAL, ELECTRICAL OR PLUMBING SYSTEMS, AND SYSTEM FORMWORK FOR BUILDINGS ON LAND SITUATED WITHIN AREA DESCRIBED IN FOURTEENTH SCHEDULE

1. The minimum level of use of prefabricated architectural systems is 80% of the total wall length of the building works.
2. The minimum level of use of prefabricated mechanical, electrical or plumbing systems is 65% of the qualifying area in the development as specified in the Code of Practice.
3. The minimum level of use of specified prefabricated structural systems is 65% of the total structural floor area of the building works.

4. The minimum level of use of system formwork is 70% of the total cast-in-place areas of super-structural works.”.

*[G.N. Nos. S 522/2013; S 729/2014; S 252/2015;
S 572/2015; S 729/2015; S 56/2016; S 395/2016;
S 572/2016; S 70/2017; S 125/2017; S 431/2017;
S 689/2017; S 288/2018; S 583/2018; S 392/2019;
S 721/2019; S 781/2019; S 819/2019; S 335/2020;
S 863/2020; S 257/2021; S 703/2021; S 335/2022]*

Made on 15 June 2022.

OW FOONG PHENG
*Permanent Secretary,
Ministry of National Development,
Singapore.*

[ND202/01-073; AG/LEGIS/SL/29/2020/1 Vol. 1]

(To be presented to Parliament under section 52 of the Building Control Act 1989).