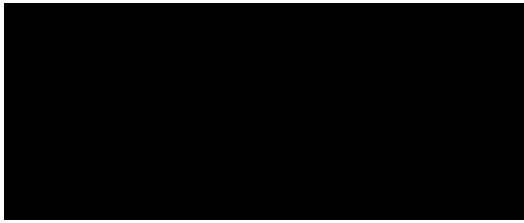

Appendix A

Approved Water Supply Impact Assessment



Our Ref : VPPW:TTMF:wtsk:60017427-2025015612L

16 October 2025

By Hand

< *Distribution List* >

Dear Sir / Madam,

Proposed Residential Development and Visitor Centre at Various Lots in DD191, Ma On Shan

Submission of Approved Water Supply Impact Assessment Report for Record

We refer to email reply from WSD System Planning Section and WSD Distribution (Sha Tin) for no further comment on the submission of captioned WSIA dated 16 October 2025 and 26 September 2025 respectively (**Appendix 1** refers). We are pleased to submit a set of the approved WSIA for your record purpose.

Yours faithfully,
For and on behalf of
AECOM Asia Co. Ltd.

A handwritten signature in black ink, appearing to be 'Vic Pun'.

Vic Pun
Technical Director
Land Supply / Municipal, Hong Kong

Encl.

Tang, Tommy

From: Maye WK NG/WSD [REDACTED]
Sent: Thursday, October 16, 2025 11:30 AM
To: Tang, Tommy
Cc: Pun, Pak Wing Vic; Eric CW CHAN/WSD
Subject: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan - WSIA
Attachments: WSD Planning Letter 20250916.pdf; Ma On Shan WSIA 20250910.pdf

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File ref. (17) in WSD/M/SP 3051/484/1S/95 Pt.5

Dear Tommy,

Further to my reply via letter ref. (16) in WSD/M/SP 3051/484/1S/95 Pt.5 dated 16 September 2025 regarding the captioned WSIA (version Sep 2025), I have no further comment on the WSIA concerned.

Regards,
 Maye NG
 E/P(2), Construction Division,
 WSD
 [REDACTED]



From: Tang, Tommy [REDACTED]
Sent: Thursday, October 16, 2025 11:00 AM
To: Maye WK NG/WSD [REDACTED]
Cc: Pun, Pak Wing Vic [REDACTED]
Subject: RE: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan - WSIA

Dear Ms. Ng,

Further to your letter ref. (16) in WSD/M/SP 3051/484/1S/95 Pt.5 dated 16 September 2025 regarding the captioned WSIA, please be advised that the details of the connections will be submitted to the Water Authority for approval during detailed design stage. Kindly if you could reply no further comment to the submission of WSIA. Thanks.

Regards,

Tommy Tang
AECOM
[REDACTED]

From: Tang, Tommy
Sent: Thursday, September 11, 2025 3:43 PM
To: [REDACTED]
Cc: Pun, Pak Wing Vic [REDACTED]
Subject: RE: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan - WSIA

Dear Ms. Ng,

Further to our letter ref. VPPW:TTMF:wtsk:60017427-2025012386L dated 25 August 2025 and your letter ref. (14) in WSD/M/SP 3051/484/1S/95 Pt.5 dated 28 August 2025 regarding the captioned WSIA, we have revised our WSIA to tee off from the adjacent DN700 fresh water distribution main for delivering water to the proposed Development. Please find the attached WSIA for your approval. Kindly if you could reply at your earliest convenience. Thanks.

Regards,

Tommy Tang
AECOM
[REDACTED]

From: [REDACTED]
Sent: Wednesday, April 2, 2025 3:07 PM
To: Tang, Tommy [REDACTED]
Cc: [REDACTED]
Subject: RE: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan

File ref. (8) in WSD/M/SP 3051/484/1S/95 Pt.5

Dear Tommy,

With reference to your letter ref. VPPW:TTMF:wtsk:60017427-2025003295L dated 5 March 2025 enclosing the WSIA and your subsequent email, it is noted that your previous proposal to obtain the water supply from the future service reservoirs at Ma On Shan Tsuen Road has been dropped and the applicant will follow the original water supply scheme formulated at the planning application stage i.e. to make a tee connection from Ma On Shan Road as well as construct a private off-site sump and pump system.

2. Our general comments on the draft WSIA are as follows :-

- (a) Drawing no. 60017427/WSIA/410 -- it seems that the private fire fighting system is missing. Please review.
- (b) Drawing no. 60017427/WSIA/410 to - 415 -- As the private off-site sump and pump system including the private pump house and the associated water mains from the private pump house to the Site are regarded as the "inside services" / "fire service" under the Waterworks Regulations, the applicant should submit the application to the Water Authority for approval.
- (c) The conditions imposed by the Town Planning Board and Lands Departments should be complied with.

3. As the protection of the Water Gathering Ground (WGG) and the private off-site sump and pump system are under the jurisdiction of our NTE Region, you may wish to consult them if required.

4. By copy this email, would NTE colleagues please note and follow up with the applicant/consultants as appropriate.

Thanks.

Regards,
Maye NG
E/P(2), Construction Division,
WSD
[REDACTED]



From: "Tang, Tommy" [REDACTED]
To: [REDACTED]
Date: 28-03-2025 16:03
Subject: RE: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan

Dear Ms. Ng,

Please find the attached WSIA for your reference. Thanks.

Regards,

Tommy Tang
AECOM
[REDACTED]

From: [REDACTED]
Sent: Friday, March 28, 2025 2:36 PM
To: Tang, Tommy [REDACTED]
Subject: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan

Dear Mr TANG,

With reference to your letter ref. VPPW:TTFM:wtsk:60017427-2025003295L dated 5 March 2025 enclosing the WSIA, please send over a soft copy for our easy reference.

Thanks.

Regards,
Maye NG
E/P(2), Construction Division,
WSD
[REDACTED]



From: Maye WK NG/WSD/HKSARG
To: "Tang, Tommy"
Cc: "Pun, Pak Wing
Vic" "Wan, Willie"
Date: 16-08-2024 14:55
Subject: Proposed Land Exchange for Residential Development cum Public Facilities at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories

Dear Mr TANG,

I refer to your preceding email dd 16-08-2024 12:05 concerning the proposed connection point of water supply as well as the revised WSIA for the proposed development and enclose the following comments from water supply planning perspective for your information and follow up:-

1. In the revised WSIA (version Aug 2024) enclosed, please be reiterated that para. 3.3 (i.e. Proposed Water Supply System) and para. 7 (i.e. Conclusion) concerning supplying fresh water from the proposed FWSR to the Development are NOT ACCEPTABLE.
2. Your attention is drawn that WSD's previous comments as shown in preceding email dd February 19, 2024 2:01 pm REMAINS VALID.

Thank you for your attention.

Regards,
Maye NG
E/P(2), WSD

From: "Tang, Tommy"
To: "Pun, Pak Wing Vic" "Wan, Willie"
Date: 16-08-2024 12:05

Subject: RE: Proposed Land Exchange for Residential Development cum Public Facilities at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories

Dear Ms. Ng,

Further to the subsequent tele-conversation regarding the connection point of water supply for the proposed development, please find the attached revised WSIA for your comments. Changes are highlighted in yellow colour. Thanks.

Regards,

Tommy Tang
AECOM

[REDACTED]

From: [REDACTED]

Sent: Monday, February 19, 2024 2:01 PM

To: Tang, Tommy [REDACTED]

Cc: [REDACTED] Pun, Pak Wing Vic [REDACTED] Wan, Willie [REDACTED] Chan, Henry [REDACTED]
[REDACTED]

Subject: Proposed Land Exchange for Residential Development cum Public Facilities at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories

Dear Tommy,

I refer to your preceding emails dated 2-11-2023 and 29-01-2024 proposing to change the connection points for the water supply to the proposed Development.

Please note that the objective of the public housing project is to provide water supply to the proposed public housing development near the Kam Ying Court and the planned water supply system has no spare capacity to cater for the additional water demand generated by the private development in D.D. 191 of Ma On Shan. Hence, your proposal is not acceptable from water supply planning point of view.

Please follow the conditions imposed by the Town Planning Board (TPB) to install, operate and maintain his own off-site private sump-pump system with the connection point at Ma On Shan Road for water supply to the Development.

Thanks.

Regards,
Maye NG

E/P(2), WSD

----- Forwarded by Maye WK NG/WSD/HKSARG on 19-02-2024 13:59 -----

From: "Tang, Tommy" [REDACTED]
 To: [REDACTED]
 Cc: [REDACTED] "Pun, Pak Wing Vic" [REDACTED] "Wan, Willie"
 [REDACTED] "Chan, Henry" [REDACTED]
 Date: 29-01-2024 15:07
 Subject: RE: 轉寄: Proposed Land Exchange for Residential Development cum Public Facilities at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories

Dear Ms. Ng,

Further to the comments below regarding the water supply scheme for captioned development, please find the attached WSIA for your review. The response to comments are included in Annex W3 of the WSIA. The hard copy of the WSIA will be dispatched to your office. Thanks.

Regards,

Tommy Tang
 AECOM

From: [REDACTED]
 Sent: Tuesday, November 21, 2023 12:11 PM
 To: Tang, Tommy [REDACTED]
 Cc: [REDACTED] Pun, Pak Wing Vic [REDACTED] Wan, Willie
 [REDACTED] Chan, Henry [REDACTED]
 Subject: 轉寄: 轉寄: Proposed Land Exchange for Residential Development cum Public Facilities at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories

Dear Tommy,

I refer to your email below and have the following comments:

1. The planned water supply systems you mentioned are mainly to serve the proposed public housing development near the Kam Ying Court and will not have spare capacity to cater for the water demand generated by the residential development in D.D. 191 of Ma On Shan. Hence, please follow the conditions imposed by the Town Planning Board to install, operate and maintain his own off-site private sump-pump system with the connection point at Ma On Shan Road for water supply to the development.
2. It is noted that the planning parameters in the schedule attached in your email are greatly different from the the approved Scheme in particular the total GFA and the average flat size. Besides, it seems that the assumed person per flat and the unit demand are too low. Please review and advise the latest planning parameters and provide a revised demand assessment for our consideration.
3. For the planning or preliminary design issues, please consult Engineer/Planning (2) - Ms NG Wan Ki, Maye and seek her advice on water supply impact assessment for the proposed development. For the inside service application, please consult Engineer/NTE(Customer Services)Application 1 - Mr. NG Ka Wing and seek his advice on the private off-site pump and sump systems for the proposed development.

Regards,
Wing CHAN
E/NTE(D1), WSD
[REDACTED]

----- Forwarded by R WANG/WSD/HKSARG on 07/11/2023 05:59 PM -----

From: "Tang, Tommy" [REDACTED]
To: [REDACTED]
Cc: "Pun, Pak Wing Vic" [REDACTED] "Wan, Willie" [REDACTED] "Chan, Henry"
[REDACTED]
Date: 02/11/2023 06:36 PM
Subject: Proposed Land Exchange for Residential Development cum Public Facilities at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories

Dear Mr. Wang (WSD),

We are the consulting engineer undertaking the proposed residential development and visitor center at various lots in DD191, Ma On Shan. Our client has received your comment regarding the proposed development in the letter from LandsD (Item 4 in attached letter refers). We would like to seek your preliminary comments regarding the proposal of water supply to the development.

We understood that new fresh water and salt water pumping station and fresh water and salt water service reservoir were proposed under the project "Site Formation and Infrastructure Works for Public Housing Developments at Ma On Shan Tsuen Road (CE 20/2020(CE))" and the project is currently in detailed design stage. The location of the proposed pumping station and service reservoir extracted from the document provided for District Council on 29 August 2023 is attached for your information. We would propose to connect the freshwater and saltwater supply from the watermain connected to proposed service reservoirs. Own off-site private sump-pump system would be installed, operated, and maintained with the connection point under the proposed service reservoirs to reduce the extent of temporary traffic arrangement and impact to the public. Exact location of private sump-pump system would be determined afterwards. For the proposed water demand from the development, please refer to attached calculation for your review. The development schedule is also attached for your information. Grateful if you could provide your comment regarding the proposal. If you have any queries, feel free to contact me at [REDACTED] or Mr. Vic Pun at [REDACTED]. Many thanks.

Regards,

Tommy Tang
Assistant Engineer
AECOM
[REDACTED]

[附件檔 "202212301L - letter from DLO_Departmental comments.pdf" 已被 HW CHAN/WSD/HKSARG 刪除] [附件檔 "Location of proposed pumping station and service reservoir.pdf" 已被 HW CHAN/WSD/HKSARG 刪除] [附件檔 "MOS Water Demand Calculation.pdf" 已被 HW CHAN/WSD/HKSARG 刪除] [附件檔 "Development schedule.pdf" 已被 HW CHAN/WSD/HKSARG 刪除] [附件檔 "2024001708L.pdf" 已被 Maye WK NG/WSD/HKSARG 刪除] [附件檔 "Ma On Shan WSIA 20240816.pdf" 已被 Maye WK NG/WSD/HKSARG 刪除]

Tang, Tommy

From: HW CHAN/WSD [REDACTED]
Sent: Friday, September 26, 2025 12:01 PM
To: Tang, Tommy
Cc: Felix KC WONG/WSD; Sharon CH CHIU/WSD; Maye WK NG/WSD; Pun, Pak Wing Vic
Subject: Re: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan

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Dear Tommy,

I refer to your email below and have no further comment on your WSIA submission for the captioned project, provided that the detailed measures to be taken to comply with the “Conditions for Working within Water Gathering Grounds” (including the layout design and proposed works during construction and operations) will be submitted WSD for approval during the detailed design stage.

Regards,
 Wing CHAN
 E/NTE(D1), WSD
 [REDACTED]



From: Tang, Tommy [REDACTED]
Sent: Friday, September 5, 2025 12:05 PM
To: HW CHAN/WSD [REDACTED]
Cc: Pun, Pak Wing Vic [REDACTED] Felix KC WONG/WSD [REDACTED] Sharon CH CHIU/WSD [REDACTED] Maye WK NG/WSD [REDACTED]
Subject: RE: RE: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan

Dear Ms. Chan,

As discussed, further to your comments below regarding the WSIA for the captioned project, we have resubmitted the WSIA for your approval on 25 August 2025 under letter ref. VPPW:TTFM:wtsk:60017427-2025012386L as attached. Grateful if you could provide your comments, if any, to the submission. Thanks.

Regards,

Tommy Tang
AECOM

From: [REDACTED]

Sent: Friday, June 6, 2025 12:09 PM

To: Tang, Tommy [REDACTED]

Cc: [REDACTED]

Subject: 轉寄: RE: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan

Dear Tommy,

I refer to your email below regarding the captioned project and have the following comments on the WSIA:

1. In Appendix III of LandsD's letter dated 30.12.2022 (see Annex W1 of the submission), it has a set of conditions for the proposal development within the Water Gathering Grounds. The consultant shall provide detailed measures to demonstrate how these requirements (such as requirements of the layout design, the works during construction and during operations etc.) can be complied with. The detailed measures and responses shall be included in the WSIA report.
2. The planning application was approved based on the use of fresh water supply for flushing, and thus the present proposal using salt water supply for flushing would deviate from the original approved proposal.
3. According to Technical Requirements for Plumbing Works in Building (TRPW) Cl. 5.1 and 5.4, Fire Service supply must be from an independent connection and the use of water should not be served for purpose other than firefighting. Please advice the proposed arrangement of fire service supply system and show in the revised drawing.
4. The entire system for water supply to the site after the connection point from Ma On Shan Road, including but not limited to the private sump and pump system, internal water mains and service connections for potable water, flushing and fire service are regarded as "inside services" and "fire service". The applicant should submit the plumbing proposals fulfilling all the latest circulars and guidelines to the Water Authority for approval.

Regards,
Wing CHAN
E/NTE(D1), WSD

[REDACTED]



----- Forwarded by HW CHAN/WSD/HKSARG on 06/06/2025 12:04 -----

From: "Tang, Tommy" [REDACTED]
 To: [REDACTED]
 Cc: [REDACTED]
 Date: 12-05-2025 15:26
 Subject: RE: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan

Dear Sir / Madam,

Further to the email below and subsequent tele-conversation with Ms. Chan, the hardcopy of WSIA as attached has been supplemented to your office for your comments. Thanks.

Regards,

Tommy Tang
 AECOM
 [REDACTED]

From: [REDACTED]
Sent: Wednesday, April 2, 2025 3:07 PM
To: Tang, Tommy [REDACTED]
Cc: [REDACTED]
Subject: RE: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan

File ref. (8) in WSD/M/SP 3051/484/1S/95 Pt.5

Dear Tommy,

With reference to your letter ref. VPPW:TTMF:wtsk:60017427-2025003295L dated 5 March 2025 enclosing the WSIA and your subsequent email, it is noted that your previous proposal to obtain the water supply from the future service reservoirs at Ma On Shan Tsuen Road has been dropped and the applicant will follow the original water supply scheme formulated at the planning application stage i.e. to make a tee connection from Ma On Shan Road as well as construct a private off-site sump and pump system.

2. Our general comments on the draft WSIA are as follows :-

(a) Drawing no. 60017427/WSIA/410 -- it seems that the private fire fighting system is missing. Please review.

(b) Drawing no. 60017427/WSIA/410 to - 415 -- As the private off-site sump and pump system including the private pump house and the associated water mains from the private pump house to the Site are regarded as the "inside services" / "fire service" under the Waterworks Regulations, the applicant should submit the application to the Water Authority for approval.

(c) The conditions imposed by the Town Planning Board and Lands Departments should be complied with.

3. As the protection of the Water Gathering Ground (WGG) and the private off-site sump and pump system are under the jurisdiction of our NTE Region, you may wish to consult them if required.

4. By copy this email, would NTE colleagues please note and follow up with the applicant/consultants as appropriate.

Thanks.

Regards,
Maye NG
E/P(2), Construction Division,
WSD
[REDACTED]



From: "Tang, Tommy" [REDACTED]
To: [REDACTED]
Date: 28-03-2025 16:03
Subject: RE: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan

Dear Ms. Ng,

Please find the attached WSIA for your reference. Thanks.

Regards,

Tommy Tang
AECOM
[REDACTED]

From: [REDACTED]
Sent: Friday, March 28, 2025 2:36 PM
To: Tang, Tommy [REDACTED]
Subject: Proposed Residential Development and Visitor Centre at Various Lots in DD 191, Ma On Shan

Dear Mr TANG,

With reference to your letter ref. VPPW:TTMF:wtsk:60017427-2025003295L dated 5 March 2025 enclosing the WSIA, please send over a soft copy for our easy reference.

Thanks.

Regards,
Maye NG
E/P(2), Construction Division,
WSD
[REDACTED]



From: Maye WK NG/WSD/HKSARG
To: "Tang, Tommy" [REDACTED]

Cc: [REDACTED]
 Vic" [REDACTED] "Wan, Willie" [REDACTED] "Pun, Pak Wing"
 Date: 16-08-2024 14:55
 Subject: Proposed Land Exchange for Residential Development cum Public Facilities at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories

Dear Mr TANG,

I refer to your preceding email dd 16-08-2024 12:05 concerning the proposed connection point of water supply as well as the revised WSIA for the proposed development and enclose the following comments from water supply planning perspective for your information and follow up:-

1. In the revised WSIA (version Aug 2024) enclosed, please be reiterated that para. 3.3 (i.e. Proposed Water Supply System) and para. 7 (i.e. Conclusion) concerning supplying fresh water from the proposed FWSR to the Development are NOT ACCEPTABLE.
2. Your attention is drawn that WSD's previous comments as shown in preceding email dd February 19, 2024 2:01 pm REMAINS VALID.

Thank you for your attention.

Regards,
 Maye NG
 E/P(2), WSD

From: "Tang, Tommy" [REDACTED]
 To: [REDACTED]
 Cc: [REDACTED] "Pun, Pak Wing Vic" [REDACTED] "Wan, Willie" [REDACTED]
 Date: 16-08-2024 12:05
 Subject: RE: Proposed Land Exchange for Residential Development cum Public Facilities at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories

Dear Ms. Ng,

Further to the subsequent tele-conversation regarding the connection point of water supply for the proposed development, please find the attached revised WSIA for your comments. Changes are highlighted in yellow colour.
 Thanks.

Regards,

Tommy Tang
 AECOM
 [REDACTED]

From: [REDACTED]
 Sent: Monday, February 19, 2024 2:01 PM
 To: Tang, Tommy [REDACTED]

Cc: [REDACTED] Pun, Pak Wing Vic [REDACTED] Wan, Willie [REDACTED] Chan, Henry [REDACTED]
[REDACTED]

Subject: Proposed Land Exchange for Residential Development cum Public Facilities at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories

Dear Tommy,

I refer to your preceding emails dated 2-11-2023 and 29-01-2024 proposing to change the connection points for the water supply to the proposed Development.

Please note that the objective of the public housing project is to provide water supply to the proposed public housing development near the Kam Ying Court and the planned water supply system has no spare capacity to cater for the additional water demand generated by the private development in D.D. 191 of Ma On Shan. Hence, your proposal is not acceptable from water supply planning point of view.

Please follow the conditions imposed by the Town Planning Board (TPB) to install, operate and maintain his own off-site private sump-pump system with the connection point at Ma On Shan Road for water supply to the Development.

Thanks.

Regards,
Maye NG
E/P(2), WSD
[REDACTED]

----- Forwarded by Maye WK NG/WSD/HKSARG on 19-02-2024 13:59 -----

From: "Tang, Tommy" [REDACTED]
To: [REDACTED]
Cc: [REDACTED] "Pun, Pak Wing Vic" [REDACTED] "Wan, Willie"
[REDACTED] "Chan, Henry" [REDACTED]
Date: 29-01-2024 15:07
Subject: RE: 轉寄: Proposed Land Exchange for Residential Development cum Public Facilities at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories

Dear Ms. Ng,

Further to the comments below regarding the water supply scheme for captioned development, please find the attached WSIA for your review. The response to comments are included in Annex W3 of the WSIA. The hard copy of the WSIA will be dispatched to your office. Thanks.

Regards,

Tommy Tang
AECOM
[REDACTED]

From: [REDACTED]
Sent: Tuesday, November 21, 2023 12:11 PM
To: Tang, Tommy [REDACTED]
Cc: [REDACTED] Pun, Pak Wing Vic [REDACTED] Wan, Willie
[REDACTED] Chan, Henry [REDACTED]

Subject: 轉寄: 轉寄: Proposed Land Exchange for Residential Development cum Public Facilities at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories

Dear Tommy,

I refer to your email below and have the following comments:

1. The planned water supply systems you mentioned are mainly to serve the proposed public housing development near the Kam Ying Court and will not have spare capacity to cater for the water demand generated by the residential development in D.D. 191 of Ma On Shan. Hence, please follow the conditions imposed by the Town Planning Board to install, operate and maintain his own off-site private sump-pump system with the connection point at Ma On Shan Road for water supply to the development.
2. It is noted that the planning parameters in the schedule attached in your email are greatly different from the the approved Scheme in particular the total GFA and the average flat size. Besides, it seems that the assumed person per flat and the unit demand are too low. Please review and advise the latest planning parameters and provide a revised demand assessment for our consideration.
3. For the planning or preliminary design issues, please consult Engineer/Planning (2) - Ms NG Wan Ki, Maye and seek her advice on water supply impact assessment for the proposed development. For the inside service application, please consult Engineer/NTE(Customer Services)Application 1 - Mr. NG Ka Wing and seek his advice on the private off-site pump and sump systems for the proposed development.

Regards,
Wing CHAN
E/NTE(D1), WSD

----- Forwarded by R WANG/WSD/HKSARG on 07/11/2023 05:59 PM -----

From: "Tang, Tommy" [REDACTED]
To: [REDACTED]
Cc: "Pun, Pak Wing Vic" [REDACTED] "Wan, Willie" [REDACTED] "Chan, Henry" [REDACTED]
Date: 02/11/2023 06:36 PM
Subject: Proposed Land Exchange for Residential Development cum Public Facilities at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories

Dear Mr. Wang (WSD),

We are the consulting engineer undertaking the proposed residential development and visitor center at various lots in DD191, Ma On Shan. Our client has received your comment regarding the proposed development in the letter from LandsD (Item 4 in attached letter refers). We would like to seek your preliminary comments regarding the proposal of water supply to the development.

We understood that new fresh water and salt water pumping station and fresh water and salt water service reservoir were proposed under the project "Site Formation and Infrastructure Works for Public Housing Developments at Ma On Shan Tsuen Road (CE 20/2020(CE))" and the project is currently in detailed design stage. The location of the proposed pumping station and service reservoir extracted from the document provided for District Council on 29 August 2023 is attached for your information. We would propose to connect the freshwater and saltwater supply from the watermain connected to proposed service reservoirs. Own off-site private sump-pump system would be installed, operated, and maintained with the connection point under the proposed service reservoirs to reduce the extent of temporary traffic arrangement and impact

to the public. Exact location of private sump-pump system would be determined afterwards. For the proposed water demand from the development, please refer to attached calculation for your review. The development schedule is also attached for your information. Grateful if you could provide your comment regarding the proposal. If you have any queries, feel free to contact me at [REDACTED] or Mr. Vic Pun at [REDACTED]. Many thanks.

Regards,

Tommy Tang
Assistant Engineer
AECOM
[REDACTED]

[附件檔 "202212301L - letter from DLO_Departmental comments.pdf" 已被 HW CHAN/WSD/HKSARG 刪除] [附件檔 "Location of proposed pumping station and service reservoir.pdf" 已被 HW CHAN/WSD/HKSARG 刪除] [附件檔 "MOS Water Demand Calculation.pdf" 已被 HW CHAN/WSD/HKSARG 刪除] [附件檔 "Development schedule.pdf" 已被 HW CHAN/WSD/HKSARG 刪除] [附件檔 "2024001708L.pdf" 已被 Maye WK NG/WSD/HKSARG 刪除] [附件檔 "Ma On Shan WSIA 20240816.pdf" 已被 Maye WK NG/WSD/HKSARG 刪除] [附件檔 "2025006488L.pdf" 已被 HW CHAN/WSD/HKSARG 刪除]

Proposed Residential Development and Visitor Centre at Various Lots in DD191, Ma On Shan

Water Supply Impact Assessment

September 2025

Prepared by:



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This document has been prepared by AECOM Asia Company Limited ("AECOM") for sole use of our client (the "Client") in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

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60017427/WSIA/Figure 2	Master Layout Plan
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60017427/WSIA/411	Existing and Proposed Fresh Water and Flushing Water Supply Layout Plan (Sheet 2 of 3)
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Annex

Annex W1	Comments from WSD regarding water supply
Annex W2	Water Demand and Hydraulic Calculation

1. Introduction

1.1 Background

- 1.1.1 AECOM Asia Company Limited (AECOM) has been commissioned by the Applicant to act as the engineering consultant for the Proposed Residential Development and Visitor Centre at Various Lots in DD191, Ma On Shan.
- 1.1.2 The site is located at the mid-level (approximately 210mPD to 250mPD) of Ma On Shan, **60017427/WSIA/Figure 1** refers.

1.2 Objective of this Submission

- 1.2.1 This report outlines the assessment results of the potential water supply impacts caused by the Proposed Development at the Application Site. The main objectives of this assessment include the followings:
- (i) Review the existing water supply condition of the Application Site;
 - (ii) Outline the methodology adopted in this assessment;
 - (iii) Identify any potential impact on the current water supply system due to the additional water supply demand from the proposed development;
 - (iv) Propose water supply mitigation measures where appropriate to mitigate the potential water supply impact.

1.3 Nomenclature

1.3.1 The following abbreviations and shortened expressions in **Table 1** are adopted in this report.

AC	Asbestos Cement
AECOM	AECOM Asia Company Limited
CIFSUS	Commercial and Industrial Floor Space Utilization Survey (PlanD)
EPD	Environmental Protection Department
F&B	Food and Beverage
GESF	Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning Version 1.0 (EPD)
GFA	Gross Floor Area
MDD	Mean Daily Demand
MLD	Million Litres per Day
mPD	Metres above Principal Datum
PlanD	Planning Department
UDD	Unit Daily Demand
WSD	Water Supplies Department
WSIA	Water Supply Impact Assessment

Table 1 – Nomenclature

2. Development Proposal

2.1 The Proposed Development

- 2.1.1 The Application Site has an area of approximately 107,200m² with a domestic Gross Floor Area (GFA) of not more than 47,200m². The proposed development comprises of low-rise residential towers, 1 clubhouse, and 1 public visitor centre. An existing access road, Ma On Shan Tsuen Road, leading to the development from the Ma On Shan Tsuen Road Roundabout will also be upgraded to attain acceptable road standard under this project, after which will be handed over to HyD for maintenance.
- 2.1.2 The anticipated completion year of the Proposed Development is 2036.
- 2.1.3 The residential site together with the visitor centre is proposed to be developed in Planning Area 81A of the Ma On Shan Development under Planning Department. The Master Layout Plan (MLP) of the Proposed Development is shown in **60017427/WSIA/Figure 2**. The proposed development schedule is summarized in **Table 2** below.

Application Site Area	About 107,200m ²
No. of Units	About 180
Person/Unit ⁽¹⁾	3.3
Anticipated Population	About 594
Domestic GFA	32,164m ²
Clubhouse GFA	1,560m ²
Public Visitor Centre GFA	580m ²

(1): Based on average domestic household size of 3.3 in Hong Lok Yuen (where most of housing is low density residential planned use) referenced to Population By-Census 2021.

Table 2 – Development Schedule

3. The Application Site

3.1 Site Description

- 3.1.1 The Application Site occupies an area of about 107,200 m², it is irregular in shape and is currently vacant. The existing topography across the Application Site varies in height, from 210mPD up to about 250mPD overall ground level.
- 3.1.2 The Application Site falls within WSD's Upper Indirect Water Gathering Grounds. To avoid affecting the water quality, the conditions stipulated by WSD in approved Section 16 planning application A/MOS/34 should be strictly followed.
- 3.1.3 The conditions stipulated by WSD in approved Section 16 planning application A/MOS/34 is included in **Annex W1**.

3.2 Existing Water Supply System

- 3.2.1 According to WSD Fresh Water Record Plan, there are existing fresh water mains near Application Site. However, WSD commented that the existing water supply system will not have the capacity to cater for the demand generated by the proposed private residential development. Please refer to **Annex W1** for the comment from WSD. According to WSD Salt Water Record Plan, there is no existing water main near application site.
- 3.2.2 Existing fresh water mains are located on Ma On Shan Tsuen Road and Ma On Shan Road.

3.3 Proposed Water Supply System

- 3.3.1 As the existing water supply system will not have the capacity to cater for the demand generated by the proposed private residential development, private off-site sump and pump system will be installed, operated and maintained by the client with the connection point at Ma On Shan Road.
- 3.3.2 As commented by WSD, to comply with the approved Section 16 planning application A/MOS/34 and Section 16A application A/MOS/65-1, fresh water supply will be used for flushing for the proposed development.
- 3.3.3 It is proposed to tee off from existing 700mm diameter fresh water pipe to connect 300mm diameter fresh water pipe to connect to the proposed pump house.
- 3.3.4 200mm diameter fresh water pipe supplying fresh water and flushing water will be connected from the pump house to the development. A separate 150mm diameter pipe will be connected from the pump house to the development for fire service supply for the proposed development.
- 3.3.5 50mm diameter fresh water pipe will be connected from the proposed private residential development to the proposed public visitor centre.
- 3.3.6 The indicative proposed pipe alignment and proposed pump house are illustrated in **60017427/WSIA/410 - 412**.

4. Assessment Methodology

4.1 Unit Demand

- 4.1.1 For estimation of water demands of non-domestic nature, “EPD/TP1/05 Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning Version 1.0” (GESF) published by Environmental Protection Department has been used as reference.
- 4.1.2 Unit demand of 390 L/head/day and 70 L/head/day have been adopted for domestic fresh water demand and flushing water demand respectively; and 35 L/h/d has been adopted for service trades.
- 4.1.3 A summary of the unit daily demand (UDD) used for different development types is shown in **Table 3** below.

Development Type	Flow Type	Fresh Water UDD (L/head/day)	Flushing Water UDD (L/head/day)
Domestic	Private Residential – R4	390	70
Clubhouse & Visitor Centre	Service Trades	35	/

Table 3 – Unit Demand

4.2 Design Population

- 4.2.1 For domestic population, average domestic household size of 3.3 in Hong Lok Yuen (where most of housing is low density residential planned use) referenced to Population By-Census 2021 had been adopted.
- 4.2.2 A summary of design population can be found in the below **Table 4**.

Development Type	Population
Domestic	594
Non-domestic	Service Trades for a Population of 594

Note: Service trade adopted 100% of domestic population

Table 4 – Design Population

4.3 Peaking Factors

- 4.3.1 The peak demand factors below shall be adopted for design:
- Peak flow rate in fresh water distribution mains = 3 x mean daily demand (MDD)
 - Peak flow in flushing water distribution mains = 2 x mean daily demand (MDD)
 - Peak flow rate in fresh water trunk mains = 1.5 x mean daily demand (MDD)
 - Peak flow rate in flushing trunk mains = 1.2 x mean daily demand (MDD)

4.4 Fire-fighting

- 4.4.1 In addition to the aforementioned facilities of the Proposed Development, water supply for fire-fighting service has been considered in this WSIA. Fire-fighting requirement for residential zone is 6,000m³/day with discharge pressure of 17m head. The fire hydrant should be of standard pattern with minimum output pressure of not less than 25 psi. With multiple hydrants operating at the same time, total output of not less than 4,000L/min shall last for 60 minutes. **Table 5** summarises the fire-fighting requirements.

Requirements	Minimum Values
Minimum fresh water supply	6,000 m ³ /day
Discharge pressure	17m
Minimum output not less than 25 psi	4,000 L/min to last for an hour

Table 5 – Fire-fighting Requirement

4.5 Design Velocity and Head of Flow

- 4.5.1 The desirable flow velocities for hydraulic checking are as follows:

Maximum velocity (under peak flow condition)

Fresh water mains:

>DN700	≤ 3 m/s
DN700 – DN525	≤ 2.5 m/s
DN450 – DN375	≤ 2 m/s
DN300 – DN200	≤ 1.5 m/s

Flushing water mains:

≥DN1000	≤ 3 m/s
DN900 – DN800	≤ 2.5 m/s
DN700 – DN300	≤ 2 m/s
DN450 – DN300	≤ 1.5 m/s

Minimum velocity (under peak flow condition)

Fresh water mains: ≥ 0.9 m/s

Flushing water mains: ≥ 0.9 m/s

- 4.5.2 The pipeline shall have a minimum gradient of 1:400. Pipes shall be laid at a minimum separation of 300mm away from existing utilities and underground structures.
- 4.5.3 The adopted minimum residual heads at extremity of the fresh water and flushing water supply system for the proposed development are as follow:
- Fresh water: 20m
 - Flushing water: 15m

5. Water Demand Estimation

5.1 Water Demand Estimates

- 5.1.1 By adopting the aforementioned design parameters, the freshwater demand and flushing water demand generated by the proposed development are estimated to be 278 m³/day and 46 m³/day respectively upon full occupation. Water demand for visitor centre is included as the service trade for domestic use considering that the water demand for visitor centre is very small. The estimation results are summarised in **Table 6** below.

Development Type	Flow Type	Fresh Water Demand (m ³ /day)	Flushing Water Demand (m ³ /day)
Domestic	Private Residential – R4	232	42
Clubhouse & Visitor Centre	Service Trades	21	/
10% contingency		25	4
Total Demand		278	46

Table 6 – Water Demand Estimation

- 5.1.2 The water demand is anticipated to start at year 2036 which is the same as the completion year.
- 5.1.3 Please refer to **Annex W2** for the detail estimation of water demand.

6. Maintenance Responsibility

6.1 Proposed Water Supply Lead-in

- 6.1.1 The Applicant is responsible for the construction, operation and maintenance of all proposed water supply facilities as mentioned in the WSIA of this Application including all internal water mains, water supply lead-in valves and those proposed water mains as shown in **60017427/WSIA/410-412**.

6.2 Proposed Private Off-site Sump and Pump System

- 6.2.1 The 300mm diameter fresh water pipe connecting from existing 700mm diameter fresh water pipe to the proposed pump house is proposed to be maintained by WSD.
- 6.2.2 The proposed pump house, watermain connecting from the pump house to the proposed private residential development and the watermain connecting from the proposed private residential development to the public visitor centre is proposed to be maintained by the Applicant.

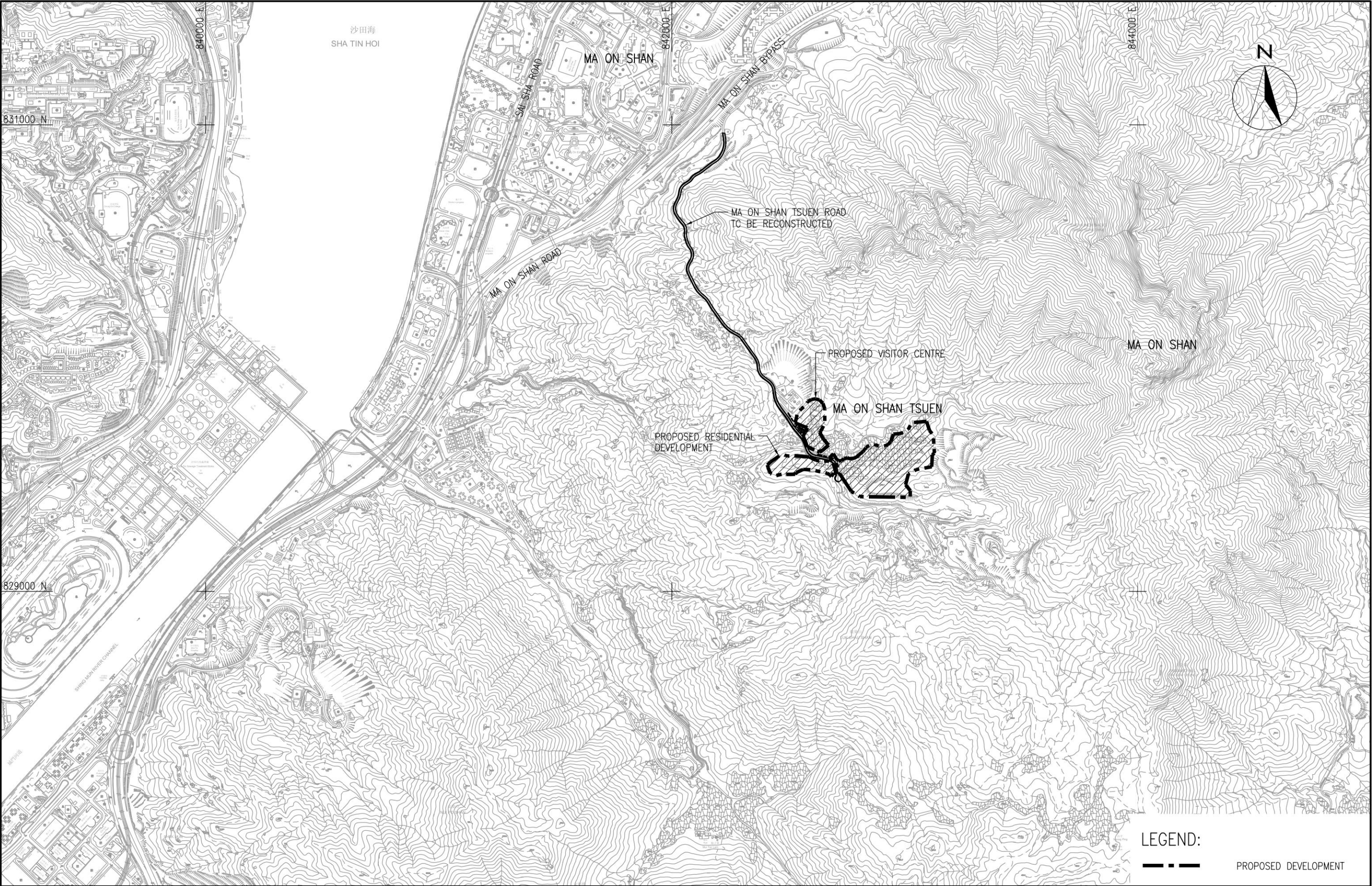
7. Conclusion

7.1 Water Supply Impact Assessment

- 7.1.1 The Application Site is near Ma On Shan Tsuen and Ma On Shan Country Park Management Centre, the location can be referred to **60017427/WSIA/Figure 1**.
- 7.1.2 AECOM Asia Company Limited (AECOM) has been commissioned by the Applicant to act as the engineering consultant for the Proposed Development in Ma On Shan.
- 7.1.3 The Application Site is mostly vacant, the plan area of the site is about 107,200 m², with hilly topography and heavily vegetated surroundings. The Proposed Development comprises of low-rise residential towers, 1 clubhouse, and 1 public visitor centre.
- 7.1.4 The Application Site falls within WSD's Upper Indirect Water Gathering Grounds. To avoid affecting the water quality, the conditions stipulated by WSD in approved Section 16A planning application A/MOS/34 should be strictly followed.
- 7.1.5 As the existing water supply system will not have the capacity to cater for the demand generated by the proposed private residential development, private off-site sump and pump system will be installed, operated and maintained by the client with the connection point at Ma On Shan Road.
- 7.1.6 Approximately 278 m³/day of freshwater demand and 46 m³/day of flushing water demand will be generated by the proposed development.
- 7.1.7 It is concluded that the proposed development will generate additional water demand. The proposed watermains as well as the proposed private off-site sump and pump system will supply fresh water and flushing water to the proposed development with the connection point at Ma On Shan Road. No adverse water supply impact is envisaged.

End of Report

Figures



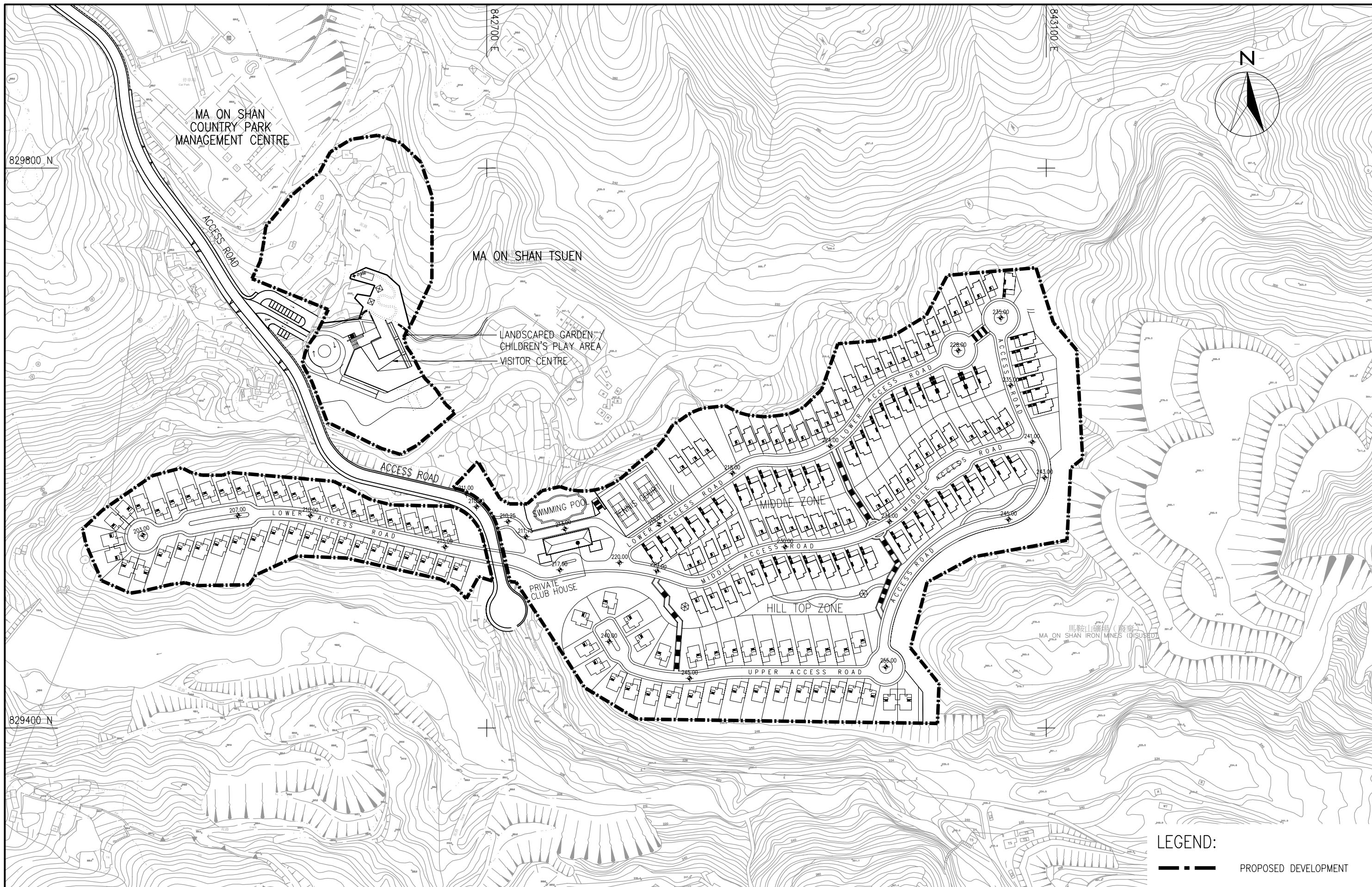
LEGEND:
- - - PROPOSED DEVELOPMENT



PROPOSED RESIDENTIAL DEVELOPMENT AND VISITOR CENTRE AT VARIOUS LOTS IN DD191, MA ON SHAN

LOCATION PLAN

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JOB No.	60017427	DRAWING No.	WSIA/ FIGURE 1
		REV	—



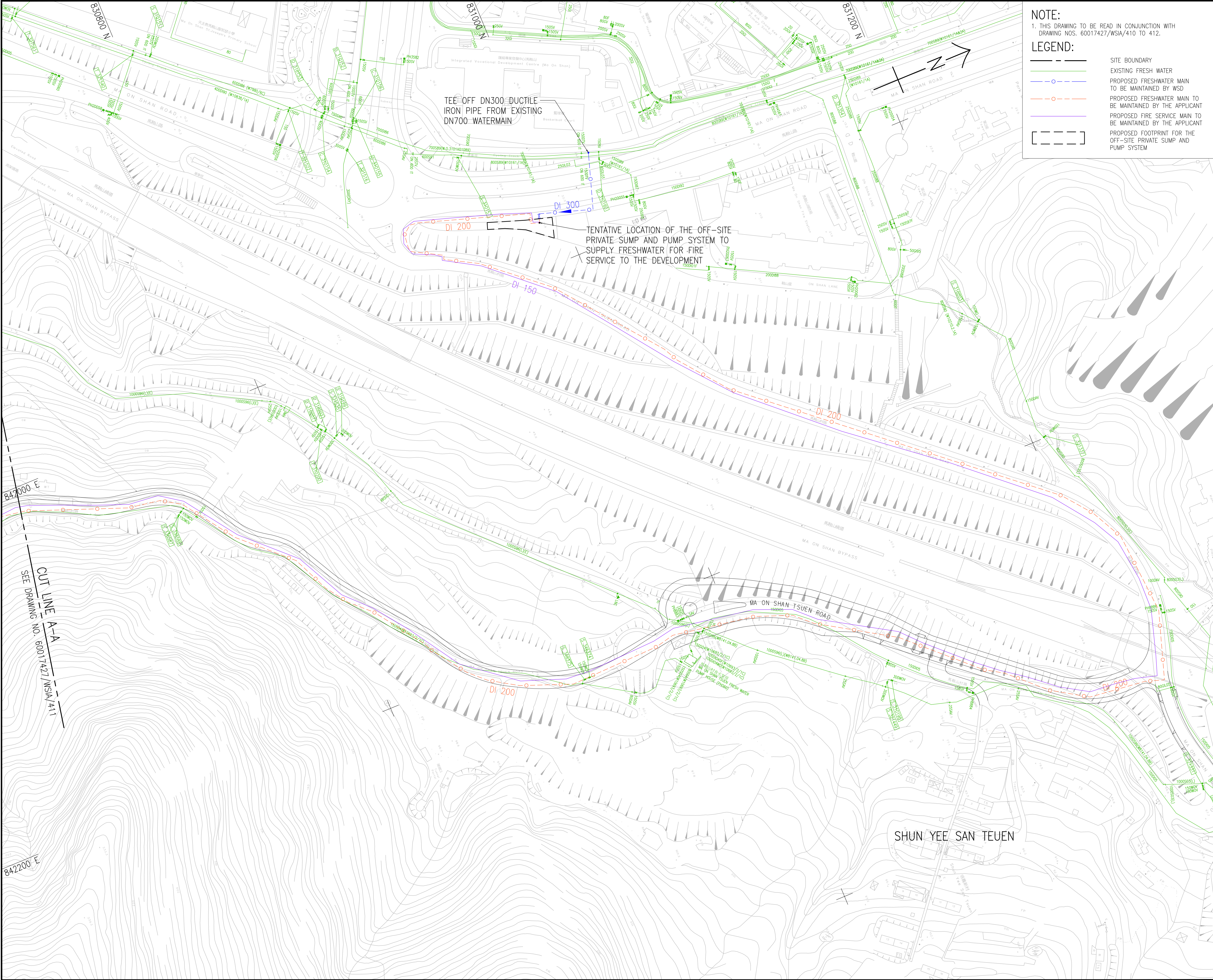
AECOM

PROPOSED RESIDENTIAL DEVELOPMENT AND VISITOR CENTRE AT VARIOUS LOTS IN DD191, MA ON SHAN

MASTER LAYOUT PLAN

SCALE	A3 1 : 2500	DATE	NOV. 2011
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JOB No.	60017427	DRAWING No.	WSIA/ FIGURE 2
		REV	—

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:
09/09/2025
P:\PROJECTS\60017427\Drawing\REPORT\WSIA_410.dwg



NOTE:
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60017427/WSIA/410 TO 412.

LEGEND:

- SITE BOUNDARY
- EXISTING FRESH WATER
- PROPOSED FRESHWATER MAIN TO BE MAINTAINED BY WSD
- PROPOSED FRESHWATER MAIN TO BE MAINTAINED BY THE APPLICANT
- PROPOSED FIRE SERVICE MAIN TO BE MAINTAINED BY THE APPLICANT
- PROPOSED FOOTPRINT FOR THE OFF-SITE PRIVATE PUMP AND PUMP SYSTEM

AECOM

PROJECT
項目

PROPOSED RESIDENTIAL DEVELOPMENT IN DD191, MA ON SHAN PROPOSED MA ON SHAN ACCESS ROAD IMPROVEMENT WORKS

CLIENT
業主

SUN HUNG KAI
REAL ESTATE AGENCY LTD.

CONSULTANT
工程顧問公司

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
修訂

I/R	DATE	DESCRIPTION	CHK.
修訂	日期	內容摘要	校核

STATUS
備註

SCALE
比例

DIMENSION UNIT
尺寸單位

KEY PLAN
索引圖

PROJECT NO.
項目編號

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱

EXISTING AND PROPOSED FRESHWATER SUPPLY LAYOUT PLAN

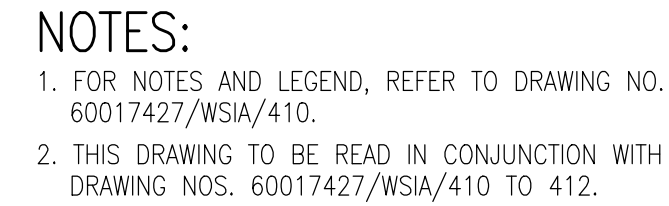
SHEET NUMBER
圖紙編號

60017427

60017427/WSIA/410

(SHEET 1 OF 3)

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PROJECT

CLIENT
業主

新鴻基
地產代理有限公司

CONSULTANT
工程顧問公司

SUB-CONSULTANTS
分判工程顧問公司

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 複核
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STATUS

KEY PLAN

索引圖

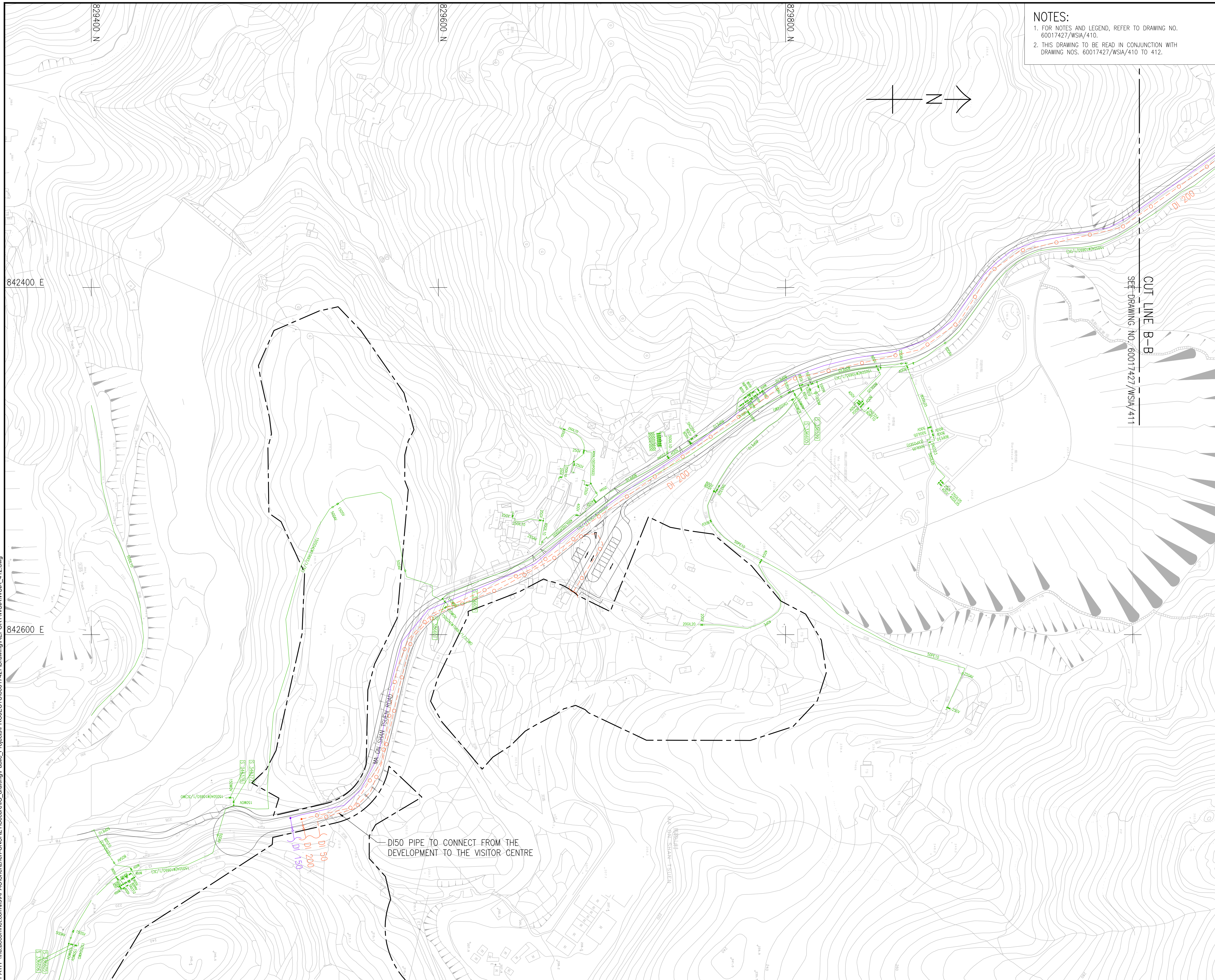
PROJECT NO.
項目編號

60017427

(SHEET 2 OF 3)

SHEET NUMBER
圖紙編號

60017427/WSIA/411



NOTES:

1. FOR NOTES AND LEGEND, REFER TO DRAWING NO. 60017427/WSIA/410.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60017427/WSIA/410 TO 412.

CUT LINE B-B
SEE DRAWING NO. 60017427/WJA/411

$$+z \rightarrow$$

~~- DI50 PIPE TO CONNECT FROM THE DEVELOPMENT TO THE VISITOR CENTRE~~

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PROJECT
項目

**PROPOSED RESIDENTIAL
DEVELOPMENT IN DD191
MA ON SHAN PROPOSED
MA ON SHAN ACCESS
ROAD IMPROVEMENT
WORKS**

CLIENT
業主

SUN HUNG KAI
REAL ESTATE AGENCY LTD.

CONSULTANT
工程顧問公司

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
修訂

I/R 欄目	DATE 日付	DESCRIPTION 内容摘要	CHK. 検印

STATUS

SCALE
比例

A3 1 : 2000

DIMENSION UNIT
尺寸單位

METRES

KEY PLAN

PROJECT NO.
項目編號

60017427

SHEET TITLE
圖紙名義

EXISTING AND PROPOSED
FRESHWATER AND FLUSHING
WATER SUPPLY LAYOUT PLAN

SHEET NUMBER
圖紙編號

60017427/WSIA/412

Annex W1

Comments from WSD regarding water supply

RECEIVED 17 JAN 2023



地政總署
沙田地政處
DISTRICT LANDS OFFICE,
SHATIN
LANDS DEPARTMENT

電話 Tel: 2158 4846

圖文傳真 Fax: 2602 4093

電郵地址 Email: [REDACTED]

本署檔號 Our Ref.: (50) in LD DLO/ST/STTL/621/EXC Pt. 3

來函檔號 Your Ref.: VAL/STTL621/L2109291/EC/ec

來函請註明本署檔號

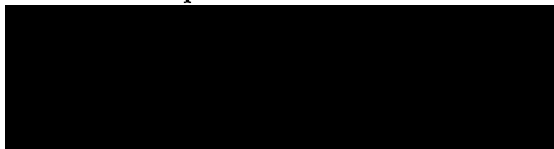
Please quote our reference in your reply

我們矢志努力不懈，提供盡善盡美的土地行政服務。
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新界沙田上禾輦路1號沙田政府合署11樓
11/F., SHA TIN GOVERNMENT OFFICES,
1 SHEUNG WO CHE ROAD, SHA TIN, N.T.

網址 Website : www.landso.gov.hk

Sun Hung Kai Real Estate Agency Ltd.
Valuation Department



By Post

30 December 2022

Dear Sirs,

**Proposed Land Exchange for
Residential Development cum Public Facilities
at Various Lots in D.D. 191, Ma On Shan, Sha Tin, New Territories
(also be known as Sha Tin Town Lot No. 621)(“the Lot”)**

I refer to your letter dated 29 September 2021 regarding the captioned matter.

Please be informed that the revised proposal and your replies to those departmental comments provided in 2016 have been circulated to the relevant departments/bureaux for comments. Please refer to the followings and the attached Appendices for your consideration and follow-up actions as appropriate.

1. Fire Services Department provided their comments as shown in Appendix I
2. Leisure and Cultural Services Department commented that the Grantee shall maintain the vegetation, trees and the landscaped area in all the granted area at his own cost.
3. Geotechnical Engineering Office of Civil Engineering and Development Department commented that the inclusion of the latest version of “Natural Terrain” clause in Appendix II is supported. The time limit to carry out and complete the mitigation and stabilisation works within the Lot and the Edged Pecked Green Area shall be 96 calendar months from the date of Agreement.
4. Water Supplies Department commented that the existing water supply system will not have the capacity to cater for the demand generated by the proposed private residential development. The applicant needs to install, operate and maintain his own off-site private sump-pump system with the connection point at Ma On Shan Road. For provision of water supply to the Lot, the applicant needs to extend his inside services to this connection point at his own cost, and shall be responsible for the construction, operation and

maintenance of the inside services to WSD's standard.

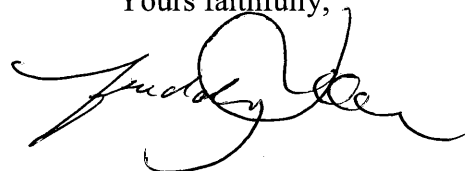
Besides, the Lot falls within WSD's Upper Indirect Water Gathering Grounds, the conditions listed in Appendix III shall be incorporated in the land conditions for the proposed land exchange.

5. Transport Department commented that according to Section 6.5.2 of HKPSG, bicycle parking spaces shall be provided in the residential developments where proper cycle tracks with direct connection to rail stations are accessible. Please ask the Grantee to advise if any cycle track would be constructed to connect the existing cycle network or the railway station.
6. Agriculture, Fisheries and Conservation Department provided their comments as shown in Appendix IV.

Comments from Planning Department, Highways Department and Buildings Department will be relayed to you in due course.

Should you have any enquiries, please contact the undersigned at 2158 4846.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Freddy Lau', with a stylized flourish at the end.

(Freddy LAU)

for District Lands Officer, Sha Tin

Encl.

21-MAY-1999 16:57

1st Plan Off STN

+852 2696 2377 P.02

A/MOS/24

Conditions Stipulated by the Director of Water Supplies for the Proposed Residential Development with Public Recreational Facilities in Area 81, Ma On Shan
(similar to the approved application (No. A/MOS/28))

(a) General Requirements

- (1) The whole of the sewage and the foul water of the development including that from the toilet facilities, swimming pools, car parks and water features etc. should be conveyed by sealed cast iron pipes with hatch boxes for discharge outside the water gathering grounds.
- (2) All solid waste and sludge arising from the development including the (surface) water treatment system, etc. should be disposed of properly outside the water gathering grounds.
- (3) The installation of a sewage pump house and a sewage rising main within the water gathering ground is noted. In view of the serious consequences of failure of the sewage pumping system, the developer should provide foolproof measures against such disastrous failure.
- (4) No chemicals including fertilizers should be used without the prior approval from WSD. Details of types, nature, quantity and point of application are required for consideration by WSD. No chemicals are allowed to be used within the 30m buffer zones of the stream courses.
- (5) The storage and discharge of pesticide or toxicant, flammable or toxic solvents, petroleum oil or tar and other toxic substances are strictly prohibited within the water gathering grounds.
- (6) Site formation and drainage plans should be submitted to WSD for approval.
- (7) Detail formation on the environmental impacts and likely effects on the water gathering grounds such as silting, loss of yield, contamination etc., the safety of waterworks installations and the associated measures to avoid possible pollution should be submitted to WSD for evaluation. If Environmental Impact Assessment is required by Environmental Protection Department, the water quality impacts to the receiving water bodies during the construction and operation phases of the proposed development should be covered in the Environmental Impact Assessment report.
- (8) The point of discharge of any foul water drain should be subject to the approval of WSD and special conditions regarding the removal of waste matters and discharge into sewer will be imposed.
- (9) No new public toilets near the Ma On Shan Country Park Management Centre within the water gathering grounds should be erected without the prior permission from WSD.

A/MOS/34

- 2 -

- (10) Disposal method of sewage from the public toilets, emptying of swimming pool water, etc, should be submitted to WSD for approval.
- (11) Should pollution be detected in future due to the proposed development, immediate remedial action to clear the pollution must be taken by the developer.

(b) Layout Design Requirements

- (1) No development will be allowed within the 30 metres buffer zones on both sides of all nearby stream courses including the two existing streams running across the site and along the site boundary.
- (2) The proposed sewage pipelines within the water gathering grounds should be located as far away from the stream courses as possible.
- (3) The proposal of installing a pipe bridge for conveying the treated water from the surface water treatment system, which is situated directly above the stream course, is noted. The developer must satisfy WSD as to the robustness of the pipe bridge to prevent pollution to the water gathering grounds.
- (4) The installation of artificial lakes should be subject to the approval of WSD. Details including the purpose of its installations, circulation pathway, possibility of overflow and sub-soil seepage, etc. should be submitted to WSD for assessment.
- (5) Please state the purpose of the proposed pavilion installation. Details of the water features including the purpose of its installation, circulation pathway, possibility of overflow and seepage through sub-soil, etc. should be provided. Complete isolation of the swimming pools and water features from the existing stream courses and groundwater is required.
- (6) Car parks should be kerbed on all sides to avoid polluting the nearby stream courses during heavy rain.
- (7) The refuse collection point should be kerbed to avoid polluting the nearby stream courses during heavy rain.
- (8) Signs and precautionary measures are necessary to indicate that the use of pesticides is not allowed within the water gathering grounds. The discharge point of the effluents from the treatment system for backyard drainage appears to be outside the water gathering grounds. As such, DEP's comments should be sought on their requirements and the necessary of treatment plant.
- (9) The proposed development will encroach onto the proposed water mains as indicated by WSD. No permanent nor temporary structure is allowed to be built within 1.5m from either side of the center of the pipeline. An un-impeded access must be maintained at all time for operation and maintenance on the water mains

A/MOS/34

- 3 -

within the development. The developer will have to bear the cost of any water main diversion required for the development.

(c) Requirements during the Construction of the Development

- (1) The types and quantities of all treatment chemicals used and stored on site during the construction and operation period should be submitted to WSD for approval.
- (2) Only dry-type potable toilet facility with regular desludging schedule is allowed during the construction period. The sludge must be disposed of properly outside the water gathering ground.
- (3) Portable toilet should be kerbed on all sides, located at least 30 metres away from the streams and deslugged on a regular basis.
- (4) Protection measures should be taken during construction period to prevent pollution and silting to the existing stream courses and the water gathering grounds. Such protection measures should be submitted to WSD for approval prior to the commencement of any construction work.
- (5) No spillage of chemicals in the water gathering grounds and no discharge of chemicals to the nearby stream courses are allowed.
- (6) The drainage traps should have sufficient capacity to ensure the proper collection and disposal of fuel, lubricants and chemicals.
- (7) Effect on yield, flow-rate and self-purification rate of existing stream courses during the construction period should be submitted to WSD.
- (8) No blasting should be carried out without the prior permission from WSD.

(d) Requirements during Operation of the Development

- (1) Details of grass management plan, weed control strategy and pest management plan should be submitted to WSD.
- (2) Use of pesticides is not allowed within the water gathering grounds. No chemical should be used without the prior permission from WSD.
- (3) No application of chemicals is permitted within 30 metres of any stream courses.
- (4) Effect on yield, flow-rate and self-purification rate of the existing stream courses during the operation of the development should be submitted to WSD.
- (5) Garbage from the refuse collection point should be disposed of properly outside the water gathering grounds.

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- (6) The developer should clarify the management and maintenance responsibilities of the sewage and surface water system. It appears that some of the facilities will become public, e.g. the visitor centre and the access road and it is important that the future owner/operator of these facilities are agreeable to the proposed arrangement.

(e) Monitoring and Auditing Requirements

- (1) The water quality in stream courses should be monitored and the results should be submitted to WSD for inspection purposes.
- (2) The name of the testing laboratory should be stated.
- (3) Details of the water quality monitoring and audit programme including the sampling locations, sampling frequency, action plans when action and targets levels exceeded should be stated.
- (4) Compliance monitoring during the construction and operation of the development should be carried out at least on a monthly basis and should include parameters listed in Table 3 and paragraph 8.4 of the Technical Memorandum on Effluent Standards.

(f) Water Supply

The proposed water mains to be laid crossing the proposed development site form part of the village supply scheme for supply to the villagers only. This water supply system will not have the capacity to cater for the demand generated by the residential and recreation development in Area 81, Ma On Shan. The applicant will have to install, operate and maintain his own off-site private sump-pump system with the connection point at Ma On Shan Road for water supply to the development.

Annex W2

Water Demand and Hydraulic Calculation

Proposed Residential Development and Visitor Centre at Various Lots in DD191, Ma On Shan										9/10/2025
Water Demand Estimation for Fresh Water and Flushing Water										
Development Type	GFA (m ²)	Avg. Unit Size (m ²)	No. of Units	Person/Unit	Person/m ²	Population	Fresh Water UDD (L/head/day)	Daily Fresh Water Demand (m ³ /day)	Flushing Water UDD (L/head/day)	Daily Flushing Water Demand (m ³ /day)
Domestic			180	3.3		594	390	232	70	42
Total Residential Population						594				
Retails:	Service Trades for a Population of	594		/			35	21	/	
10% contingency								25		4
						Total Fresh Water Demand (m ³ /day)	278	Total Flushing Water Demand (m ³ /day)		46
Note 1: It is assumed that the service trade already included the water demand from visitor centre.										
Hydraulic Analysis by Flow Velocity										
Fresh Water										
Nominal Diameter of existing fresh water mains =							700	mm		
Internal Diameter of existing fresh water mains =							700	mm		
							0.7	m		
Pipe Area =							0.385	m ²		
Assuming that the flow velocity of watermain =							2.5	m/s		
The flow capacity of watermain =							0.962	m ³ /s		
The water demand of the proposed development is equivalent to							0.39%	of the existing water main		
Estimated Fresh Water Demand for Proposed Development =							278	m ³ /day		
							0.0032	m ³ /s		
Estimated Flushing Water Demand for Proposed Development =							46	m ³ /day		
							0.0005	m ³ /s		
Peaking Factor for Fresh Water Distribution Mains =							3			
Peaking Factor for Flushing Water Distribution Mains =							2			
Required Peak Flow Rate for Proposed Development =							0.0107	m ³ /s		
To supply water for the Proposed Development,										
Nominal Diameter of Proposed Pipe Size =							200	mm		
Internal Diameter of Proposed Pipe Size=							200	mm		
							0.2	m		
Pipe Area =							0.031	m ²		
Assuming that the flow velocity of watermain =							0.9	m/s		
The flow capacity of watermain =							0.028	m ³ /s		
Factor of Safety =							2.64			
=>							OK			
Estimated Fresh Water Demand for Proposed Public Visitor Centre =							21	m ³ /day		
							0.0002	m ³ /s		
Peaking Factor for Fresh Water Distribution Mains =							3			
Required Peak Flow Rate for Proposed Development =							0.0007	m ³ /s		
To supply water for the Proposed Development,										
Nominal Diameter of Proposed Pipe Size =							50	mm		
Internal Diameter of Proposed Pipe Size=							50	mm		
							0.05	m		
Pipe Area =							0.002	m ²		
Assuming that the flow velocity of watermain =							0.9	m/s		
The flow capacity of watermain =							0.002	m ³ /s		
Factor of Safety =							2.45			
=>							OK			

