









RM. NAME	RM. NO.	WP TYPE FLOOR	DESCRIPTION	WP TYPE WALL	DESCRIPTION
① TOILET PBU_1 (SHFT)	B2A-T08	TYPE 4	BOSCOLASTIC		
② TOILET PBU_3 (SHFT)	B2B-T08	TYPE 4	BOSCOLASTIC		
③ TOILET PBU_A1 (SHFT)	B2B-T01	TYPE 4	BOSCOLASTIC		
④ SHOWER (MALE)	B2B-018	TYPE 4	BOSCOLASTIC		
⑤ LOCKER (MALE)	B2B-017	TYPE 4	BOSCOLASTIC		
⑥ TOILET (MALE)	B2B-T03	TYPE 4	BOSCOLASTIC		
⑦ SHOWER (FEMALE)	B2B-021	TYPE 4	BOSCOLASTIC		
⑧ LOCKER (FEMALE)	B2B-019	TYPE 4	BOSCOLASTIC		
⑨ TOILET (FEMALE)	B2B-T04	TYPE 4	BOSCOLASTIC		
⑩ TOILET PBU_A3 (SHFT)	B2B-T07	TYPE 4	BOSCOLASTIC		
⑪ TOILET PBU_A1 (SHFT)	B2C-T05	TYPE 4	BOSCOLASTIC		
⑫ CLEANER	B2C-003	TYPE 4	BOSCOLASTIC		
⑬ TOILET PBU_1 (SHFT)	B2C-T06	TYPE 4	BOSCOLASTIC		
⑭ LAC	B2C-004	TYPE 3+4	KISTAL 9 ADMIX & BOSCOLASTIC		
⑮ WATER PUMP ROOM	B2B-M04	TYPE 3+4	KISTAL 9 ADMIX & BOSCOLASTIC		
⑯ WATER TANK	B2A-M02	TYPE 3+4	KISTAL 9 ADMIX & BOSCOLASTIC (DOUBLE SLAB)	TYPE 3+4	KISTAL 9 ADMIX & BOSCOLASTIC (DOUBLE SLAB)
⑰ DIESEL TANK PUMP	B2B-M07	TYPE 4	BOSCOLASTIC		
⑱ DIESEL TANK	B2B-M06	TYPE 4	BOSCOLASTIC		
⑲ AHU ROOM	B2A-M04	TYPE 3+4	KISTAL 9 ADMIX & BOSCOLASTIC		
⑳ STORM WATER TANK	-	TYPE 3+4	KISTAL 9 ADMIX & BOSCOLASTIC	TYPE 4	BOSCOLASTIC

**WATERPROOFING MATERIAL SUMMARY**

**LEGEND**

- CONCRETE SLAB**
  - INSULATED FLAT ROOFS & DECKS-INVERTED ROOFS
  - DAVCO K10 (PU) POLYURETHANE
  - 6mm THK DRAINAGE MAT
  - 50mm THK EXTRUDED INSULATION BOARD
  - 100gsm GEOTEXTILE SEPARATION LAYER
  - AKIX 1635 PU SEALANT
  - 3.0x3.0mm THK CAST-IN-SITU PANEL SCREED
- TYPE 2 - DAVCO K10 GR 2000 ROOT RESISTANT WATERPROOF MEMBRANE**
- TYPE 3 - KISCOPE KISTAL 9 CONCRETE ADMIXTURE (GATEMENT LEVELS)**
  - HYDRODUCT CF08 (25mmTHK)/ISO DRAIN 20 (DRAIN CELLS)
  - KISCOPE PR HYDROPHILIC RUBBER WATERSTOP (CJ)
  - KISCOPE KISTAL 9 CONCRETE ADMIXTURE (3RD STOREY)
- TYPE 4 - BOSCOLASTIC FLEXIBLE CEMENTITIOUS WATERPROOFING**
  - PREPRUFE 300R UPWARD BOND WATERPROOFING MEMBRANE
  - SILCOR 560 SPRAY APPLIED POLYURETHANE WATERPROOFING
  - HYDRODUCT CF08 (10mmTHK)/ISO DRAIN 08 (DRAIN CELLS)
- NOTES**
  1. THIS DRAWING REFERS ONLY TO WATERPROOFING.
  2. REFER TO NCC-A-WP-00-401-403 FOR WATERPROOFING TYPICAL DETAILS.
  3. REFER TO SEPARATE DRAWING DETAILS FOR WATERPROOFING INSIDE PBU TOILETS.
  4. THIS DRAWING SHOULD BE READ WITH THE LATEST CONCRETE BODY PLAN & FINISHING PLAN RESPECTIVELY.

**KEYPLAN**

**Owner:** MINISTRY OF HEALTH  
Colleagues Building  
16 College Road  
Singapore 169854

**Owner's Agent:** MOH HOLDINGS PTE LTD  
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**Operator:** NATIONAL CANCER SINGAPORE  
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**Project Management:** Davis Langdon KPK (S) Pte Ltd  
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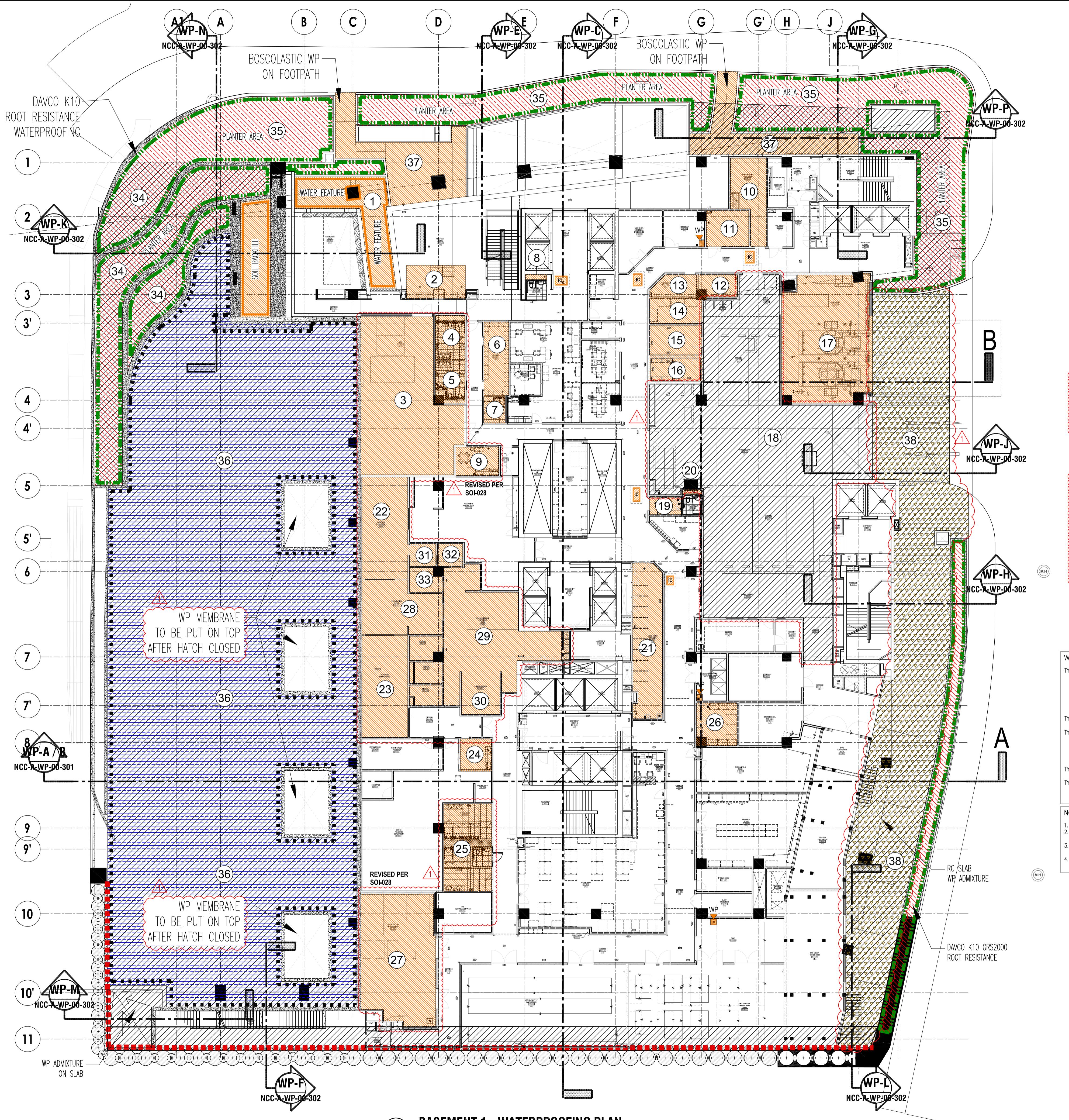
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**Project Title:** PROPOSED NEW ERECTION OF 24 STOREY WITH 4 BASEMENTS NEW NATIONAL CANCER CENTRE OF LOT 0467K TS22 AT OUTRAM MEDICAL CAMPUS, 20 OUTRAM ROAD (BUKIT MERAH PLANNING AREA)

**Drawing Description:**  
**BASEMENT 2**  
**WATERPROOFING KEYPLAN**

**FILENAME:** NCC Basement Waterproofing Plan.dwg  
**SCALE:** 1:200  
**DATE:** NOV 13 2017  
**REV:** 3  
**DRAWN:** RAY  
**CHECKED:** VNC  
**DRAWING NO.:** NCC-A-WP-B2-104  
**FOR CONSTRUCTION**



	RM. NAME	RM. NO.	WP TYPE	DESCRIPTION	WP TYPE	DESCRIPTION	
			FLOOR		WALL		
①	WATER FEATURE	-	TYPE 4	BOSCOLASTIC	TYPE 4	BOSCOLASTIC	
②	F&B FOOD KIOSK	B1A-004	TYPE 4	BOSCOLASTIC			
③	AHU	B1A-M01	TYPE 4	BOSCOLASTIC			
④	TOILET (FEMALE)	B1A-T02	TYPE 4	BOSCOLASTIC			
⑤	TOILET (MALE)	B1A-T01	TYPE 4	BOSCOLASTIC			
⑥	LOCKERS	B1A-006	TYPE 4	BOSCOLASTIC			
⑦	SHOWER	B1B-T03	TYPE 4	BOSCOLASTIC			
⑧	TOILET PBU_A2 (SHAFT)	B1A-T03	TYPE 4	BOSCOLASTIC			
⑨	PANTRY	B1B-005	TYPE 4	BOSCOLASTIC			
⑩	WASTE HOLDING TANK ROOM	B1B-M01	TYPE 4	BOSCOLASTIC			
⑪	DILUTION TANK	B1B-M02	TYPE 4	BOSCOLASTIC			
⑫	RESEARCH WASTE STORE	B1A-015	TYPE 4	BOSCOLASTIC			
⑬	PT GAS ROOM	B1A-015a	TYPE 4	BOSCOLASTIC			
⑭	STORE FOOD WASTE	B1A-007	TYPE 4	BOSCOLASTIC			
⑮	STORE BIO/CYTO WASTE	B1A-011	TYPE 4	BOSCOLASTIC			
⑯	STORE RADIOACTIVE WASTE	B1A-012	TYPE 4	BOSCOLASTIC			
⑰	COMPACTOR	B1A-017	TYPE 4	BOSCOLASTIC			
⑱	LOADING DOCK	B1A-010	TYPE 1	KISTAL 9 ADMIX		1	
⑲	CLEANER	B1B-038	TYPE 4	BOSCOLASTIC			
⑳	TOILET PBU_A3 (SHAFT)	B1B-T02	TYPE 4	BOSCOLASTIC			
㉑	LINEN CHUTE TERMINUS	B1B-037	TYPE 4	BOSCOLASTIC		1	
㉒	CYTOTOXIC CLEAN ROOM 1	10B-097	TYPE 4	BOSCOLASTIC			
㉓	CYTOTOXIC CLEAN ROOM 2	10B-117	TYPE 4	BOSCOLASTIC			
㉔	PANTRY	B1B-031	TYPE 4	BOSCOLASTIC			
㉕	CHANGING (M)(F)	B1C-006 B1C-007	TYPE 4	BOSCOLASTIC			
㉖	LINEN	B1C-022	TYPE 4	BOSCOLASTIC			
㉗	AHU ROOM FOR GENERAL AREAS	B1C-M01	TYPE 4	BOSCOLASTIC		1	
㉘	PREPARATION ROOM	10B-101	TYPE 4	BOSCOLASTIC			
㉙	PROCESSING & DISPENSING ROOM	10B-102	TYPE 4	BOSCOLASTIC			
㉚	CLINICAL REVIEW	10B-118	TYPE 4	BOSCOLASTIC			
㉛	AIR LOCK	10B-083	TYPE 4	BOSCOLASTIC			
㉜	CHANGE	10B-092	TYPE 4	BOSCOLASTIC			
㉝	HOLDING	10B-098	TYPE 4	BOSCOLASTIC			
㉞	LANDSCAPE	-	TYPE 1+2	KISTAL 9 ADMIX & DAVCO K10 GRS2000	TYPE 2	DAVCO K10 GRS2000	
㉟	LANDSCAPE	-	TYPE 2	DAVCO K10 GRS2000	TYPE 2	DAVCO K10 GRS2000	
㉟	-	-	TYPE 3+5	KISTAL 9 ADMIX & SILCOR 560 PU WP	TYPE 5	SILCOR 560 PU WP	
㉟	-	-	TYPE 4	BOSCOLASTIC	RFI 161	TYPE 4	BOSCOLASTIC
㉟	DRIVEWAY	-	TYPE 3+8	KISTAL 9 ADMIX & BITUTHENE 5000		1	

**WATERPROOFING MATERIAL SUMMARY**

TYPE 1 - DAVCO K10 (PU) POLYURETHANE  
-6mm THK DRAINAGE MAT  
-50mm THK EXTRUDED INSULATION BOARD  
-100 GSM GEOTEXTILE SEPARATION LAYER  
-AKFIX P635 PU SEALANT  
-3.0x3.0mx50mm THK CAST-IN-SITU PANEL SCREED

TYPE 2 - DAVCO K10 GRS 2000 ROOT RESISTANT WATERPROOF MEMBRANE

TYPE 3 - KISCOTE KISTAL 9 CONCRETE ADMIXTURE (BASEMENT LEVELS)  
-HYDRODUCT CF20 (25mmTHK)/ISO DRAIN 20 (DRAIN CELLS)  
-KISCOTE PR HYDROPHILIC RUBBER WATERSTOP (CJ)  
-KISCOTE KISTAL 9 CONCRETE ADMIXTURE (3RD STOREY)

TYPE 4 - BOSCOLASTIC FLEXIBLE CEMENTITIOUS WATERPROOFING

TYPE 5 - PREPRUFE 300R UPWARD BOND WATERPROOFING MEMBRANE  
-SILCOR 560 SPRAY APPLIED POLYURETHANE WATERPROOFING  
-HYDRODUCT CF08 (10mmTHK)/ISO DRAIN 08 (DRAIN CELLS)

**NOTES**

- THIS DRAWING REFERS ONLY TO WATERPROOFING.
- REFER TO NCC-A-WP-00-401~403 FOR WATERPROOFING TYPICAL DETAILS.
- REFER TO SEPERATE DRAWING DETAILS FOR WATERPROOFING INSIDE PBU TOILETS.
- THIS DRAWING SHOULD BE READ WITH THE LATEST CONCRETE BODY PLAN & FINISHING PLAN RESPECTIVELY.

**WALL / SKIN WALL**

- SKIN WALL**  
SILCOR 560 SPRAY APPLIED PU WP MEMBRANE  
WP ADMIXTURE
- LANDSCAPE & PLANTER WALL**  
DAVCO K10 GRS2000
- SKIN WALL + SHIELDING WALL**  
SILCOR 560 SPRAY APPLIED PU WP MEMBRANE  
DRAIN CELL - HYDRODUCT CF08 (8mmTHK)  
WP ADMIXTURE
- SKIN WALL**  
SILCOR 560 SPRAY APPLIED PU WP MEMBRANE  
DRAIN CELL - HYDRODUCT CF08 (8mmTHK)  
WATER PROTECTION ADMIXTURE
- RC WALL**  
-BOSCOLASTIC WP
- PREPRUFE 300R**
- SILCOR 560 SPRAY APPLIED PU WP MEMBRANE**
- RC WALL**  
-WATERPROOFED CONCRETE ADMIXTURE KISTAL 9
- RC WALL**  
-DRAIN CELLS (CF08)

**LEGEND**

**CONCRETE SLAB**

- INSULATED FLAT ROOFS & DECKS-INVERTED ROOFS**  
-DAVCO-K10 PU  
-6mmTHK DRAINAGE MAT  
-50mm THK EXTRUDED INSULATION BOARD  
-100gsm GEOTEXTILE SEPARATION LAYER  
-AKFIX P635 PU SEALANT  
-3000x3000x50mm THK CAST IN SITU PANEL WITH BRC3315 MESH JOINT FILLED W/ PU SEALANT
- LANDSCAPE & PLANTER BOX AREA**  
-DAVCO K10 GRS2000
- BASEMENT 4 TO 1**  
KISTAL 9 ADMIX  
KISCOTE R WATERSTOP (FOR CJ)
- INTERNAL/EXTERNAL WET AREA & WATER RETAINING STRUCTURE**  
GENERAL WET AREA / TOILET SHAFT  
WATER FEATURE 2 AT BASEMENT 1  
-BOSCOLASTIC WP
- RAFT SLAB**  
-PREPRUFE 300R

**WP**

- GENERAL WET AREA**  
ROOMS WITH BASIN & FLOOR TRAP  
600x600mm APPLICATION AREA  
-BOSCOLASTIC WP
- DRAIN CELLS - HYDRODUCT CF20**
- SILCOR 560 SPRAY APPLIED PU WATERPROOFING**
- BITUTHENE 5000 WATERPROOFING SHEET**

**CIAP Architects Pte Ltd**  
Comments and corrections made on this shop drawing/document do not relieve the Contractor/Sub-Contractor of his contractual responsibilities and from compliance with requirements of the specifications and drawings. This check is only for review of general conformance with the design concept of the project and general compliance with the design intent of the specifications and drawings. The Contractor/Sub-Contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, co-ordinating his work with that of all other trades and performing his work in a safe and satisfactory manner.

AP : Approved / No exception taken.  
 AWC : Approved with comments / No re-submission required.  
 R&R : Revise & Resubmit.  
 RJ : Rejected.

Date received : \_\_\_\_\_ Reviewed by : \_\_\_\_\_  
Date returned : \_\_\_\_\_ Date & Signature : \_\_\_\_\_

**Arup Singapore Pte Ltd**  
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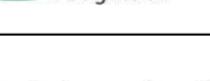
**AECOM Singapore Pte Ltd**  
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Date returned : \_\_\_\_\_ Date & Signature : \_\_\_\_\_

**...  
KEYPLAN**

**Owner :**  
**MINISTRY OF HEALTH**  
College of Medicine Building  
16 College Road  
Singapore 169854  


**Owner's Agent :**  
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**Operator :**  
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**Project Management :**  
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Davis Langdon KPK  
An AECOM Company

**Architect :**  
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ncc-pj.sg@shimz.biz www.shimz-global.com

**Project Title :**  
**PROPOSED NEW ERECTION OF 24 STOREY WITH 4 BASEMENTS NEW NATIONAL CANCER CENTRE OF LOT 00467K TS22 AT OUTRAM MEDICAL CAMPUS, 20 OUTRAM ROAD (BUKIT MERAH PLANNING AREA)**

**Drawing Description :**  
**BASEMENT 1**  
**WATERPROOFING KEYPLAN**

**FILENAME:** NCC Basement Waterproofing Plan.dwg  
**SCALE:** 1:200      **DATE:** NOV 13 2017  
**DRAWN:** RAY      **CHECKED:** VNC  
**REV.** **3**

NCC Basement Waterproofing Plan.dwg		
200	DATE: NOV 13 2017	REV.
AY	CHECKED: VNC	3

