6.2 Operations (Arrival and Departure) per Aircraft

Passenger Composition with A/C Type Q (Seat)	Annual Passenger P Total x Q	Annual Operation δ P/seat/L.F	Peak Day Factor β Day/month	Peak Day Operation A δ x β	Peak Hour Factor α Hour/day	Peak Hour Operation R A x α
[International])						
$B747_{SP}$ 1.1% (280)	5,700	41	1/280	1 (0.15)	0.20	0.2
A310 4.8% (210)	23,940	228	1/280	1 (0.81)	0.20	0.2
B737 1.7% (90)	8,360	186	1/280	1 (0.66)	0.20	0.2
[Domestic]						
B737 46.2% (90)	229,500	4,250	1/280	15 (15.18)	0.20	3.0
DHC 13.9% (36)	68,850	3,130	1/280	11 (11.18)	0.20	2.2
G.A 32.3% (17)	160,650	16,065	1/280	57 (57.37)	0.20	11.4
Total	497,000	23,900		86 (85.35)	0.20	17.2

6.3 Required Number of Apron Berths (Peak Hour) for International and Domestic Carriers

Aircraft Type International & Domestic	Peak Hour Arrival B=R/2	Occupancy Time (min.) F	No. of Berth per Aircraft E=BxF/60x1.2	Planned No. of Berth	Extra Berth H	Required No. of Berth K
$B747_{SP}$	0.1	70	0.14	1	0	1
A310	0.1	70	0.14	1	1	2
B737	1.6	45	1.44	2	0	2
DHC8	1.1	45	0.99	1	0	1
G.A.	5.7	30	3.42	4	0	4
Total :				9	1	10

Projected Annual Aircraft Movements by Routes

Year	Route	Annual Passengers	Aircraft Mavements L.J 280-Seater	M.J 210 Seater	S.J 90 Seater	N.J 36-Seater	G.A 6-19 Seater	Annual	Busy day
	International								
2000	Oceania	11,600		63	111			174	4
	South-East Asia	8,400		80				80	2
	America, Europe	0							
	Sub-Total	20,000		143	111			254	6
	Domestic								
	Port. M	75,100			1,391			1,391	6
	Lae	22,800			422			422	2
	Hoskins	13,600			252			252	2
	Kavieng & Others	24,300				1,105		1,105	4
	Kieta	31,900			324	654		978	4
	Others	90,300					11,287	11,287	42
	Sub-Total	258,000			2,389	1,759	11,287	15,435	60
	Total	278,000		143	2,500	1,759	11,287	15,689	66
2010	International								
	Oceania	19,000		101	186			287	4
	South-East Asia	13,300		127				127	2
	America, Europe	5,700	41					41	2
	Sub-Total	38,000	41	228	186			455	8
	Domestic								
	Port. M	141,800			2,626			2,626	10
	Lae	39,700			735			735	2
	Hoskins	23,000			426			426	2
	Kavieng & Others	36,400				1,655		1,655	6
	Kieta	57,450			463	1,475		1,938	8
	Others	160,650					16,065	16,065	58
	Sub-Total	459,000			4,250	3,130	16,065	23,445	86
	Total	497,000	41	228	4,436	3,130	16,065	23,900	94

Attachment 9-3 Comparison of Passenger Terminal Building Standard

Function	Federal Aviation Administration (FAA)	British Airports Authority (BAA)	International Air Transport Ass. (IATA)
Departure Lobby			
Seated:	2.75 m^2/Pax. (67%)	1.0 m^2/Pax. (50%)	2.3 m^2/Pax.
Standing:	–	1.0 m^2/Pax.	1.4 m^2/Pax.
Circulation:	–	+25%	–
Check-in			
Queuing Time:	N/A	less than 3 min.	less than 3 min. for 95% of Pax. Peak less than 5 min. for 80% of Pax.
Queue Length:	3.5 to 4.5 m	N/A	N/A
Process Rate:	1/2 of SBR in 20 min.	1.5 to 2.0 min./Pax.	N/A
Area:	N/A	0.8 m^2/Pax. with hold baggage	0.8 m^2/Pax. with hold baggage
	N/A	0.6 m^2/Friend	0.6 m^2/Friend
Circulation:	N/A	25%	N/A
Passport Control			
Process Rate/Dept.:	N/A	12 to 20 sec./Pax. 95% processed in less than 12 min.	95% queue for less than 1.0 min.
Process Rate/Arrv.:	N/A		
Area:	N/A	0.6 m^2/Pax.	0.6 m^2/Pax.
Security Control			
Process Rate:	N/A	N/A	95% in less than 3 min.
Area:	N/A	N/A	N/A
Departure Lounge			
Seating:	2.8 m^2/Pax.	1.0 m^2/Pax. (60%)	1.5 m^2/Pax. (50%)
Standing:	N/A	1.0 m^2/Pax.	1.0 m^2/Pax.
	Plus circulation	+25%	+10%
Baggage Reclaim			
1st bag to device:	N/A	N/A	N/A
1st pax. to Bag. claim:	N/A	Max. 25 min. between Arrv. of 1st Pax. in hall and reclaim of last Bag.	Max. 25 min. between Arrv. of 1st Pax. in hall and reclaim of last Bag.
Net Areas			
Domestic:	–	1.25 m^2/Domes. Pax.	0.8 m^2/Domes. Pax.
International:	–	2.00 m^2/Intntl. short haul Pax.	–
Long Haul:	–	3.25 m^2/Intntl. long haul Pax.	1.6 m^2/Intntl. Pax.
Custom Inspection			
Queue Length:	–	–	–
Total Area:	–	1.5 m^2/Pax.	6.2 m^2/Pax.
Public Arrv. Lobby			
General Waiting Area	–	2.8 m^2/person	N/A
Pax.: Friend Ratio	N/A	N/A	N/A
Bag. per Pax.	–	1.0	1.3
Kerb Space (meter per 1000 annual pax.)	0.1 to 0.2	0.1	N/A
Car Park Space (per million departures)	400	N/A	N/A

Attachment 10-1 Calculation of Design Coverage

(1) Aircraft Movement Forecasts

(times per year)

Aircraft	Type	1995	2000	2010	2020
B747 SP	Int.	-	-	41	60
	Dom.	-	-	-	-
A300	Int.	-	143	228	330
	Dom.	-	-	-	-
B737	Int.	-	111	186	270
	Dom.	316	2,390	4,250	4,574

* Except F28, DHC8, GA because max. weight of these aircraft is less than 50% weight of A300.

* Int.; International Dom.; Domestic

(2) Numbers of takoff and landing

(case 1); Life: 10 years (2000 - 2010)

					takeoff	landing
A300	Int.	(143+(228-143)/2)	x 10 =	1,860	930	930
B737	Int.	(111+(186-111)/2)	x 10 =	1,490	745	745
	Dom.	(2389+(4250-2389)/2)	x 10 =	33,200	16,600	16,600

(case 2); Life: 10 years (2010 - 2020)

					takeoff	landing
B747	Int.	(41+(60-41)/2	x 10 =	510	255	255
A300	Int.	(228+(330-228)/2)	x 10 =	2,790	1,395	1,395
B737	Int.	(186+(270-186)/2)	x 10 =	2,280	1,140	1,140
	Dom.	(4250+4574-4250)/2)	x 10 =	44,120	22,060	22,060

(case 3); Life: 20 years (2000 - 2020)

						takeoff	landing
B747	Int.	0	+	510	=	510	255	255
A300	Int.	1,860	+	1,790	=	4,650	2,325	2,325
B737	Int.	1,490	+	2,280	=	3,770	1,885	1,885
	Dom.	33,200	+	44,120	=	77,320	38,660	38,660

(3) Coverage

(case 1); Life: 10 years (2000 - 2010)

Aircraft Type			n_i	P_i	P_o	$\sqrt{P_i/P_o}$	$\overline{n_i}$	w_i	$w_i \times \overline{n_i}$
A300	Int.	To	930	35.7	35.7	1.000	930	4	3,720
		La	930	31.7	35.7	0.942	626	4	2,504
B737	Int.	To	745	18.9	35.7	0.728	123	4	492
		La	745	16.7	35.7	0.684	92	4	368
	Dom.	To	16,600	18.9	35.7	0.728	1,181	4	4,724
		La	16,600	16.7	35.7	0.684	770	4	3,080
								Total	14,888

Coverage of runway ($\alpha = 0.04$) $N = \alpha \times$ total = 596

Coverage of taxiway ($\alpha = 0.05$) $N = \alpha \times$ total = 744

(case 2); Life: 10 years (2010 - 2020)

Aircraft Type			n_i	P_i	P_o	$\sqrt{P_i/P_o}$	$\overline{n_i}$	w_i	$w_i \times \overline{n_i}$
B747	Int.	To	255	40.9	35.7	1.070	375	8	3,000
		La	255	29.6	35.7	0.910	155	8	1,240
A300	Int.	To	1,395	35.7	35.7	1.000	1,395	4	5,580
		La	1,295	31.7	35.7	0.942	917	4	3,668
B737	Int.	To	1,140	18.9	35.7	0.728	168	4	672
		La	1,140	16.7	35.7	0.684	123	4	492
	Dom.	To	22,060	18.9	35.7	0.728	1,453	4	5,812
		La	22,060	16.7	35.7	0.684	935	4	3,740
								Total	24,204

Coverage of runway ($\alpha = 0.04$) $N = \alpha \times$ total = 968

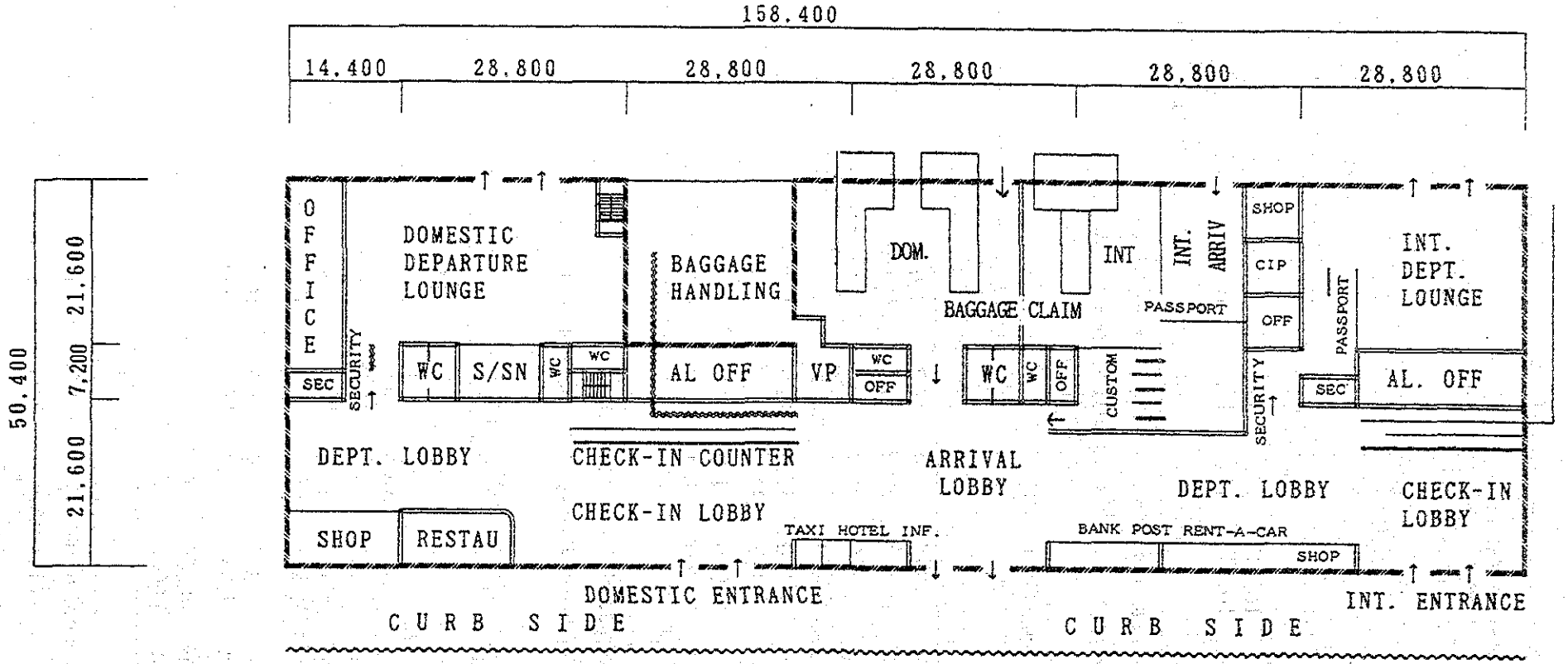
Coverage of taxiway ($\alpha = 0.05$) $N = \alpha \times$ total = 1,210

(case 3); Life: 20 years (2000 - 2020)

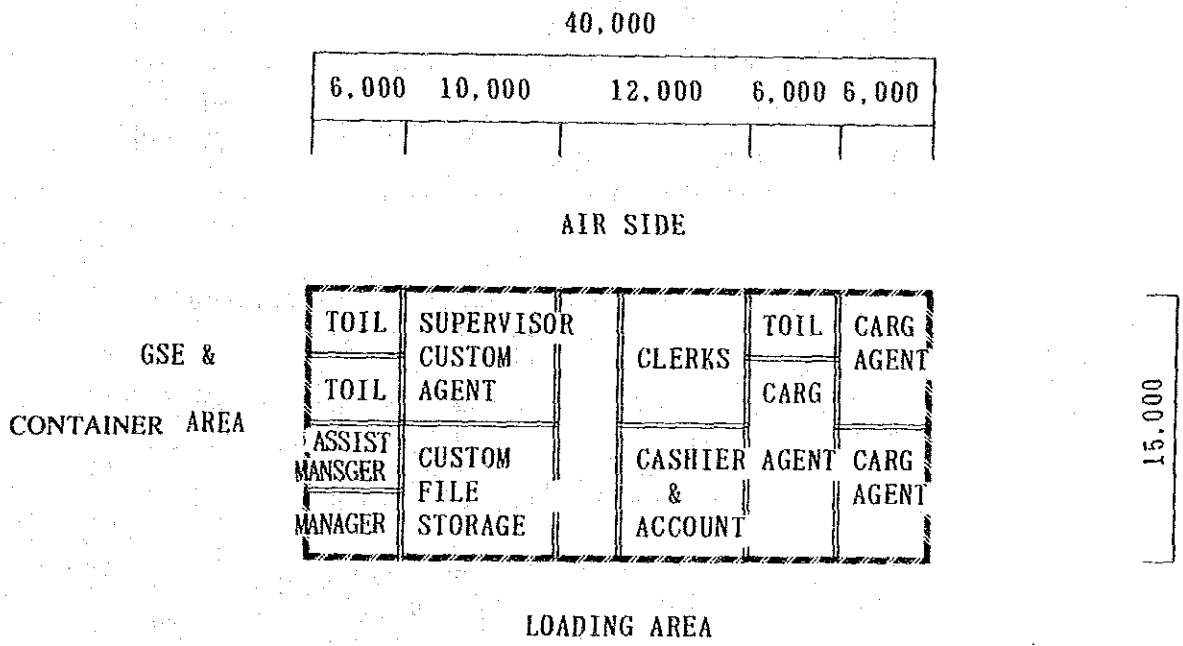
Aircraft Type			n_i	P_i	P_o	$\sqrt{P_i/P_o}$	$\overline{n_i}$	w_i	$w_i \times \overline{n_i}$
B747	Int.	To	255	40.9	35.7	1.070	375	8	3,000
		La	255	29.6	35.7	0.910	155	8	1,240
A300	Int.	To	2,325	35.7	35.7	1.000	2,325	4	9,300
		La	2,325	31.7	35.7	0.942	1,483	4	5,932
B737	Int.	To	1,885	18.9	35.7	0.728	242	4	968
		La	1,885	16.7	35.7	0.684	174	4	696
	Dom.	To	38,660	18.9	35.7	0.728	2,095	4	8,380
		La	38,660	16.7	35.7	0.684	1,373	4	5,492
								Total	35,008

Coverage of runway ($\alpha = 0.04$) $N = \alpha \times$ total = 1,400

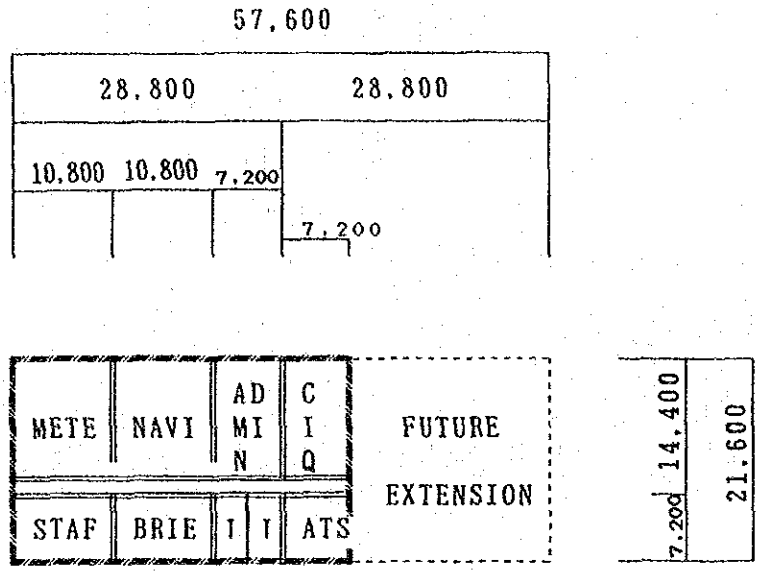
Coverage of taxiway ($\alpha = 0.05$) $N = \alpha \times$ total = 1,750



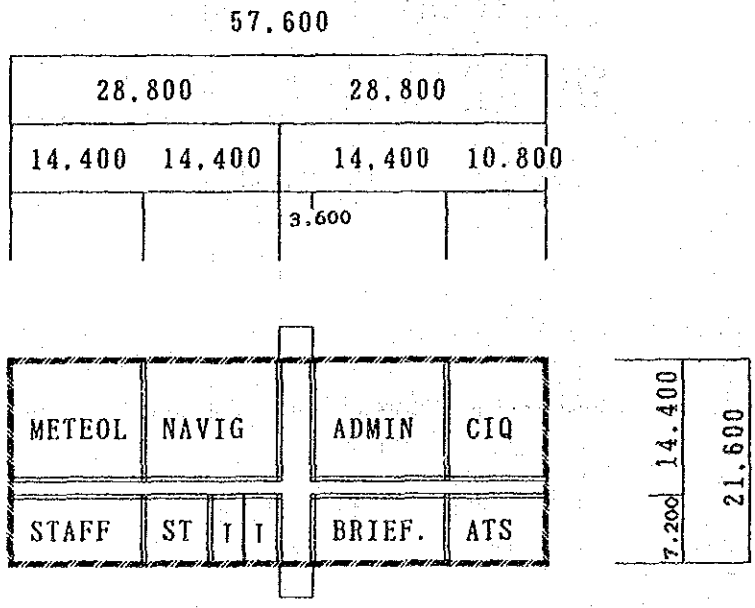
Attachment 10-2 Passenger Terminal Building, Year 2010



Attachment 10-3 Cargo Terminal Building, Year 2010

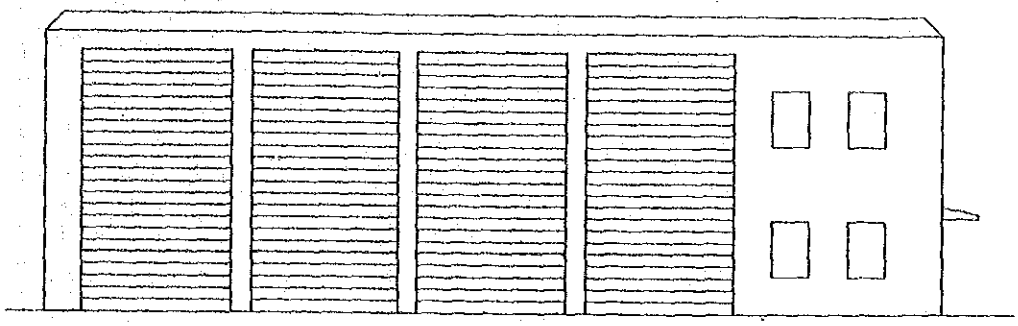


GROUND FLOOR PLAN YEAR 2000

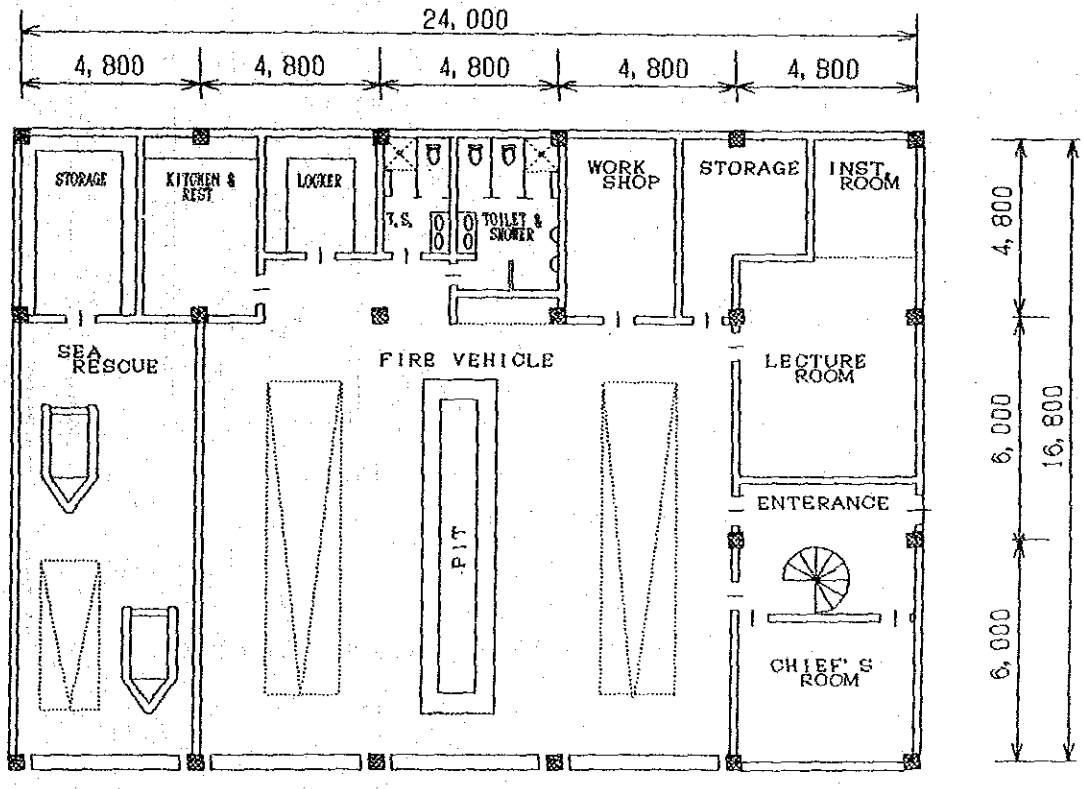


GROUND FLOOR PLAN YEAR 2010

Attachment 10-4 Administration Buiding

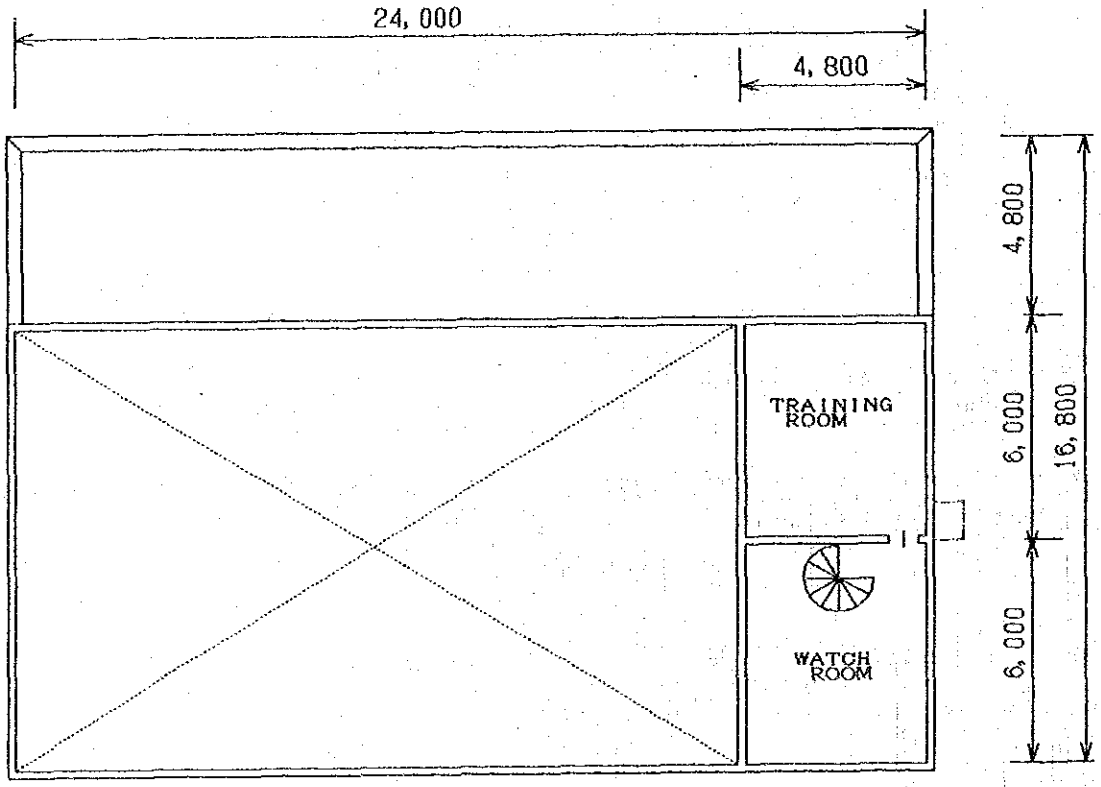


ELEVATION



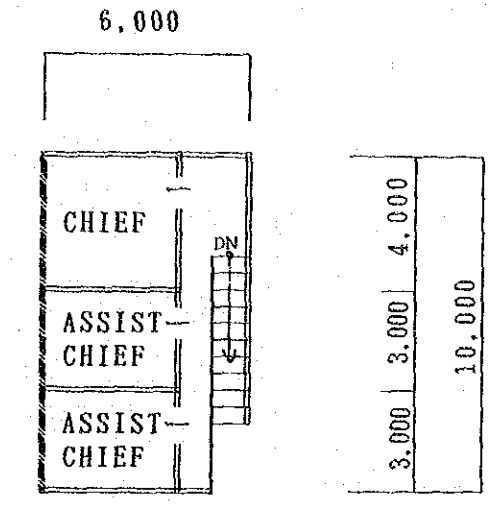
GROUND FLOOR

Attachment 10-5 Fire Fighting Station, Year 2010

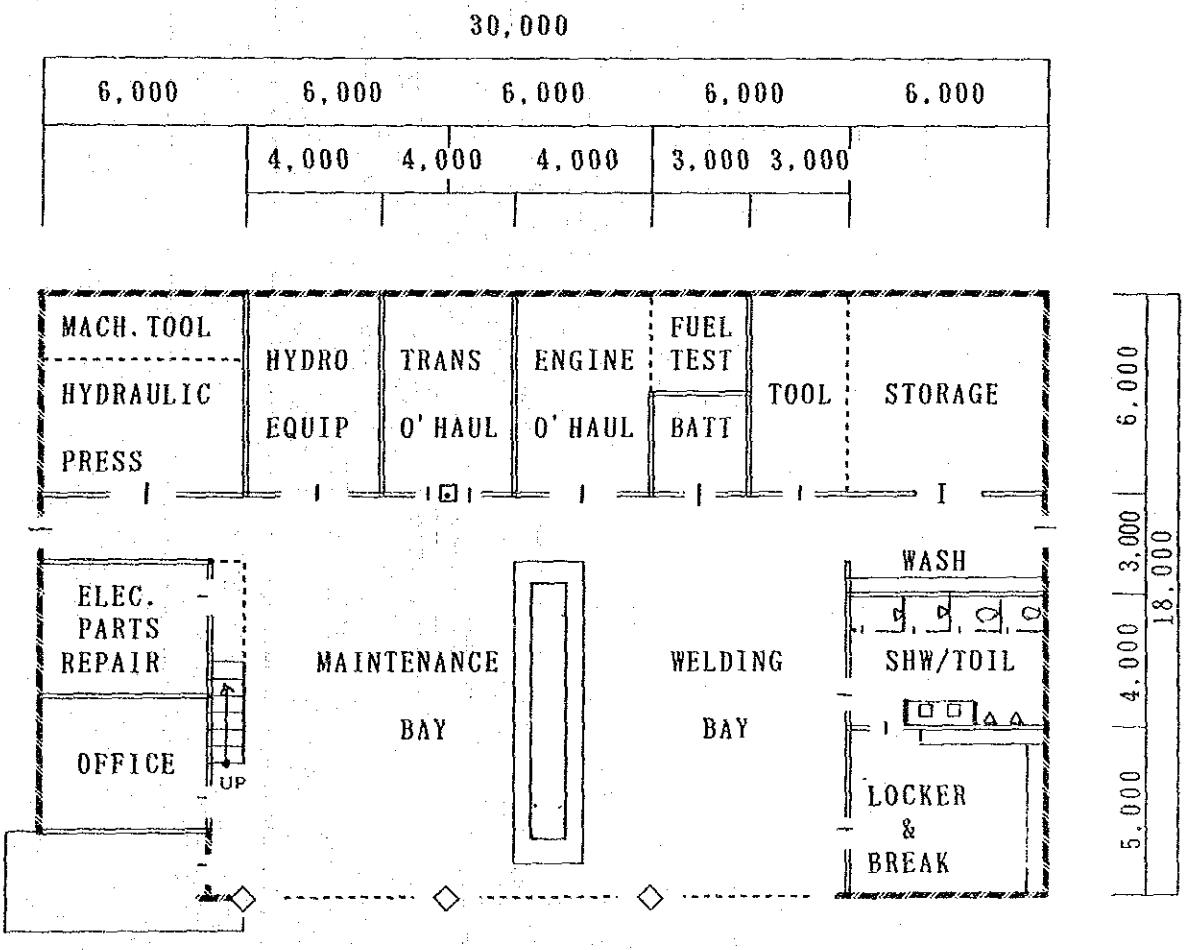


FIRST FLOOR

Attachment 10-6 First Floor Plan of Fire Fighting Station, Year 2010

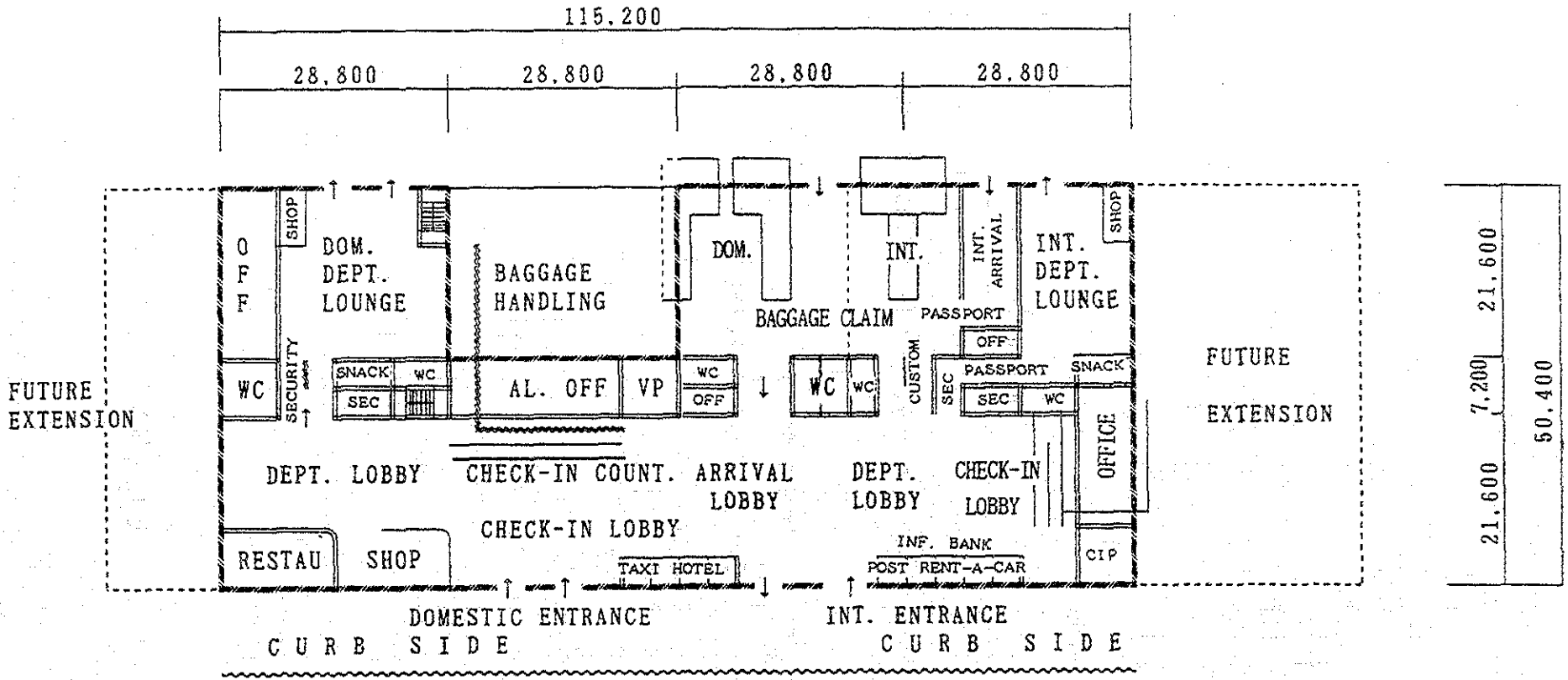


MEZZANINE FLOOR

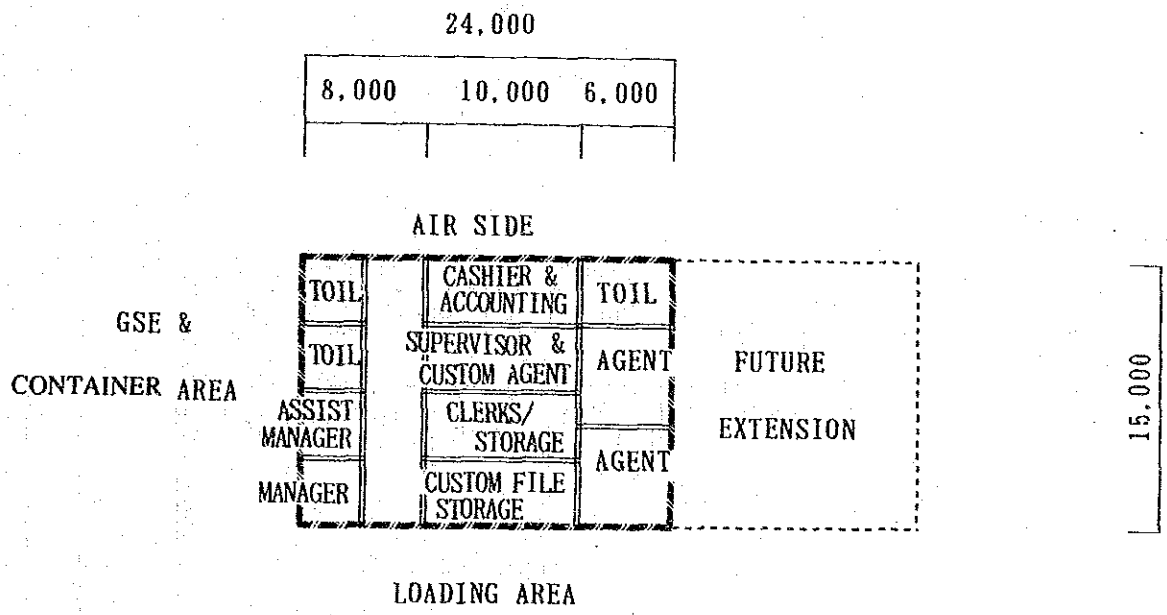


GROUND FLOOR

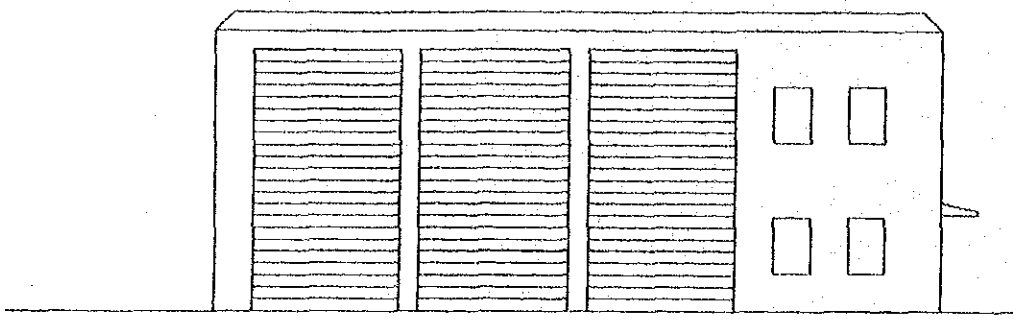
Attachment 10-7 Maintenance Shop



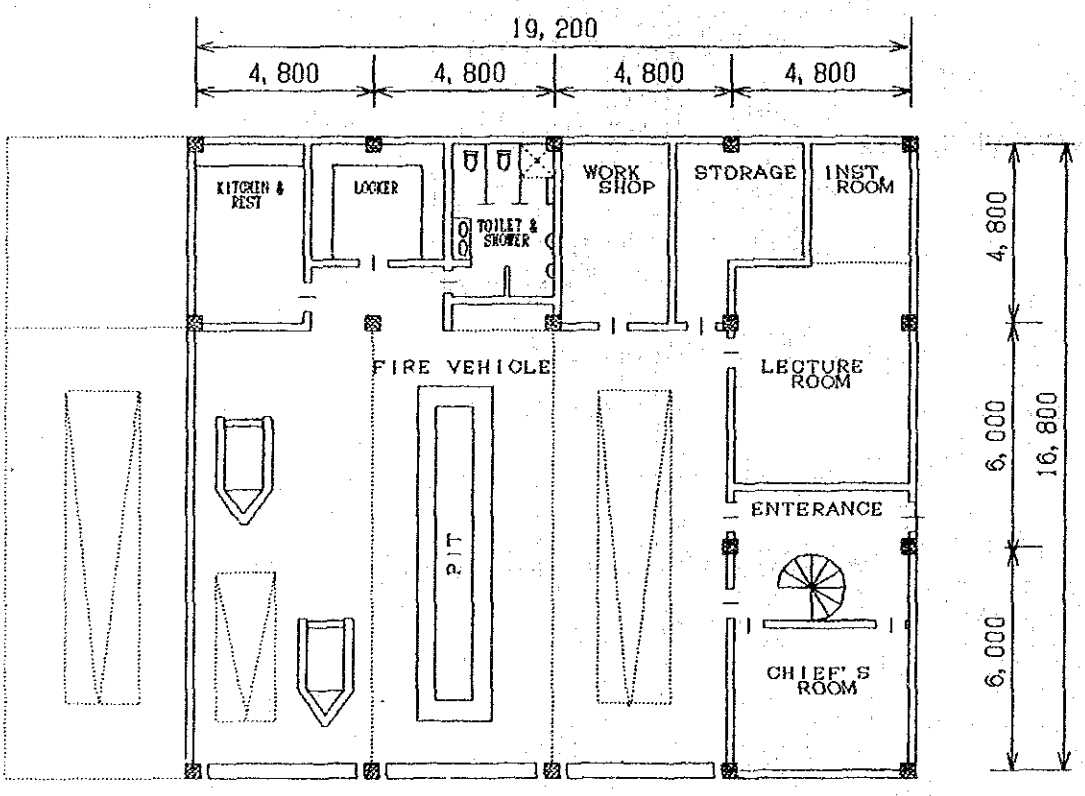
Attachment 11-1 Passenger Terminal Building, Year 2000



Attachment 11-2 Cargo Terminal Building, Year 2000

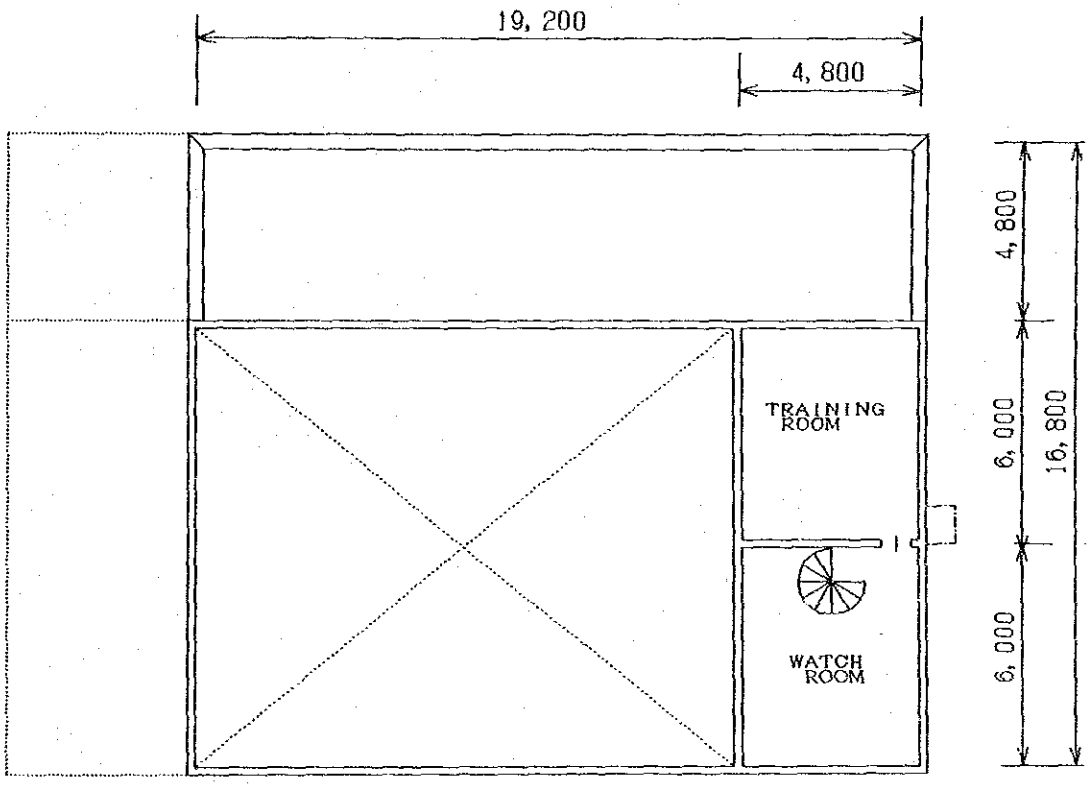


ELEVATION



GROUND FLOOR

Attachment 11-3 Fire Fighting Station, Year 2000



FIRST FLOOR

Attachment 11-4 First Floor Plan of Fire Fighting Station, Year 2000