

CHAPTER VI

CONCLUSION AND SUGGESTION

6.1. Conclusion

The airport is not even been constructed. but it is important to know the ICAO Code and the design based on the biggest plane that enters the airport. The Boeing 747-400 is putted on ICAO Code Letter 4E, the code is the biggest so far in Indonesia. Some of the planned design are match with the ICAO Code, even larger than the minimum limitation. The aircraft performances cases calculation resulted smaller than the planned length. This could be better for even the next 10 years for the anticipation of increasing the number of the passenger, baggage, and plane.

The runway is designed to two lanes. The first lanes is 3250 x 60 m while the second lane is 3600 x 60 m. Both of the runway is calculated based on the aircraft performance where the biggest value of the length is in Landing cases. The length result of the Runway included with the RESA will be 3490 m and 3840 m. Both of the runway is separated 500 m based on middle line of runway regarding to the time to approach the runways. Runway shoulder and runway strip is valued based on the middle line of the runways, so the total width of runway is 200 m. The total value of taxiway width will be 90 m which has calculated from the minimum limit for the 4E Code.

6.2. Suggestion

The author made the design is according to minimum International Aviation Code Organization Code. The new airport is must be constructed as fast as possible because the Adisutjipto airport is no longer handle the increasing passenger, aeroplane, and baggage number for the future. The final project is runway oriented only and the aircraft is already included and match with the result, the wind blows will be need for the future research. For the Yogyakarta province, it is important to have the international class of airport. Airport is suggested to have more than the specific code in order to maintain the passengers in future. The specification of the airport is can be used for the 4F code which is an advancement in the aerial part of Yogyakarta in order to have the challenge in future.

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Photos of activities in New Yogyakarta International Airport in Temon, Kulon Progo, Yogyakarta. (taken 15th November 2016)



A.1.1. Photos of Information Land of New Airport



A.1.2. Photos of Banner in the Project Location



A.1.3. Photos of Land Clearing



A.1.4. Photos of Land Clearing Activities



A.1.5. Photos of Workers at Land Clearing Activities



A.1.6. Photos of Workers at Land Clearing Activities

TRANSPORTASI DAN KOMUNIKASI

Tabel 9.2.1 Arus Lalu Lintas Udara Dalam Negeri melalui Bandar Udara Adisutjipto per Bulan di D.I. Yogyakarta, 2007 - 2015
Amount of Domestic Air Traffic via Adisutjipto Airport per Month in D.I. Yogyakarta , 2007 - 2015

Bulan/Month	Pesawat/Aeroplane		Penumpang/Passenger			Bagasi/ Baggage (kg)
	Datang Arrivals	Berangkat Departures	Datang Arrivals	Berangkat Departures	Transit Transit	Bongkar Unloaded
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Januari/January	1 888	1 890	217 414	235 995	542	1 507 456
2. Pebruari/February	1 662	1 665	205 921	195 558	643	1 372 938
3. Maret/March	1 882	1 879	217 069	211 309	602	1 373 894
4. April/April	1 902	1 901	226 265	221 463	1 013	1 399 027
5. Mei/May	2 020	2 022	265 060	258 267	580	1 665 042
6. Juni/June	1 873	1 876	246 855	245 858	418	1 695 709
7. Juli/July	2 051	2 051	295 975	274 781	229	2 371 068
8. Agustus/August	2 049	1 852	291 203	273 832	370	2 187 250
9. September/September	1 910	1 911	248 833	238 937	477	1 592 717
10. Oktober/October	1 980	1 977	264 802	270 064	349	1 577 752
1. Nopember/November	1 923	1 920	256 759	260 983	187	1 500 476
2. Desember/December	2 031	2 032	283 318	279 743	155	1 761 690
Jumlah/Total	23 171	22 976	3 019 474	2 966 790	5 565	20 005 019
2014	21 728	21 739	2 953 337	2 916 673	8 787	18 779 348
2013	31 221	31 100	2 739 113	2 965 166	18 511	17 687 907
2012	17 585	17 578	2 377 616	2 357 005	52 582	15 604 819
2011	15 138	15 102	2 025 785	2 010 662	55 175	13 390 374
2010	22 379	22 385	1 723 905	1 709 827	55 208	12 264 660
2009	18 080	18 070	1 580 814	1 556 003	42 661	11 842 296
2008	11 608	11 603	1 340 376	1 321 061	40 669	14 801 502
2007	11 260	11 249	1 280 184	1 268 843	49 273	10 601 878

Sumber : Bandara Adisutjipto Yogyakarta
 Source : Adisutjipto Airport Authority of Yogyakarta
 Ket./Note :

TRANSPORTATION AND COMMUNICATION

Tabel 9.2.1 Arus Lalu Lintas Udara Dalam Negeri melalui Bandar Udara Adisutjipto per Bulan di D.I. Yogyakarta, 2007 - 2015
Table Amount of Domestic Air Traffic via Adisutjipto Airport per Month in D.I. Yogyakarta , 2007 - 2015

Bulan/Month	Bagasi/ Baggage (kg)		Barang/ Cargo (kg)		Paket Pos/ Mail (kg)	
	Muat Loaded	Bongkar Unloaded	Muat Loaded	Transit Transit	Bongkar Unloaded	Muat Loaded
(1)	(8)	(9)	(10)	(11)	(12)	(13)
1. Januari/January	1 904 395	541 848	923 610	1 258	253	21 590
2. Pebruari/February	1 466 982	447 877	771 752	0	446	15 845
3. Maret/March	1 537 698	525 251	862 465	0	11	16 206
4. April/April	1 619 863	531 883	915 033	0	104	10 763
5. Mei/May	1 931 003	565 611	1 040 535	0	300	2 472
6. Juni/June	1 877 934	629 794	1 065 272	0	7	9
7. Juli/July	2 411 049	553 270	937 643	0	259	3 354
8. Agustus/August	2 196 754	537 040	667 971	7	748	1 951
9. September/September	1 778 888	571 481	944 364	1	0	0
10. Oktober/October	2 009 979	568 732	995 432	0	3	137
11. Nopember/November	1 915 754	525 716	997 378	0	0	0
12. Desember/December	2 101 441	617 082	980 286	0	0	0
Jumlah/Total	22 751 740	6 615 585	11 101 741	1 266	2 131	72 327
2014	21 469 787	5 734 494	10 294 874	2 524	12 068	205 827
2013	20 524 344	5 192 127	8 750 911	3 640	40 789	125 331
2012	18 095 644	4 955 715	9 064 694	74 560	126 670	169 277
2011	15 479 833	4 839 751	7 632 579	269 856	154 571	120 830
2010	14 376 891	4 695 399	7 256 544	279 118	181 976	214 577
2009	14 970 437	3 996 872	6 952 648		383 893	403 911
2008	13 266 219	3 989 593	7 559 401		409 395	430 697
2007	11 944 474	4 097 755	6 430 574		349 826	325 914

Sumber : Bandara Adisutjipto Yogyakarta
Source : Adisutjipto Airport Authority of Yogyakarta
Ket./Note :

TRANSPORTASI DAN KOMUNIKASI

Tabel 9.2.2 Arus Lalu Lintas Udara Luar Negeri melalui Bandar Udara Adisutjipto per Bulan di D.I. Yogyakarta, 2015
Table Amount of International Air Traffic via Adisutjipto Airport per Month in D.I. Yogyakarta, 2015

Bulan/Month	Pesawat/Aeroplane		Penumpang/Passenger		Barang/ Cargo (kg)
	Datang Arrivals	Berangkat Departures	Datang Arrivals	Berangkat Departures	Bongkar Unloaded
(1)	(2)	(3)	(4)	(5)	(6)
1. Januari/January	121	121	13 711	13 854	3 477
2. Pebruari/February	110	110	11 760	10 802	2 563
3. Maret/March	125	124	13 918	13 160	2 819
4. April/April	124	124	13 885	12 284	4 295
5. Mei/May	129	128	16 318	13 931	923
6. Juni/June	123	123	16 726	13 591	3 036
7. Juli/July	130	130	19 497	13 079	1 425
8. Agustus/August	67	67	9 150	8 872	1 824
9. September/September	122	122	15 988	14 974	5 844
10. Oktober/October	128	128	15 503	15 591	6 269
11. Nopember/November	124	123	16 244	14 383	7 433
12. Desember/December	128	128	19 072	18 922	4 928
Jumlah/Total	1 431	1 428	181 772	163 443	44 836

Sumber : Bandara Adisutjipto Yogyakarta
 Source : Adisutjipto Airport Authority of Yogyakarta
 Ket./Note :

TRANSPORTATION AND COMMUNICATION

Lanjutan

Tabel 9.2.2 Arus Lalu Lintas Udara Luar Negeri melalui Bandar Udara Adisutjipto per Bulan di D.I. Yogyakarta, 2015
Table Amount of International Air Traffic via Adisutjipto Airport per Month in D.I. Yogyakarta, 2015

Bulan/Month	Barang/ Cargo (kg)	Bagasi/Baggage (kg)		Paket Pos/Mail (kg)	
	Muat Loaded	Bongkar Unloaded	Muat Loaded	Bongkar Unloaded	Muat Loaded
(1)	(7)	(8)	(9)	(10)	(11)
1. Januari/January	162 889	135 476	109 579	0	0
2. Pebruari/February	168 002	112 024	87 396	0	0
3. Maret/March	144 918	130 366	98 686	0	0
4. April/April	180 018	127 681	95 352	0	0
5. Mei/May	123 256	150 319	105 839	0	0
6. Juni/June	146 836	1 695 709	1 877 934	0	0
7. Juli/July	116 794	271 646	112 413	0	0
8. Agustus/August	52 778	98 063	69 610	0	0
9. September/September	119 568	158 844	108 312	0	0
10. Oktober/October	134 546	140 817	118 685	0	0
11. Nopember/November	129 259	148 832	119 752	0	0
12. Desember/December	106 934	179 771	167 736	0	0
Jumlah/Total	1 585 798	3 349 548	3 071 294	0	0

Sumber : Bandara Adisutjipto Yogyakarta
 Source : Adisutjipto Airport Authority of Yogyakarta
 Ket./Note :

TRANSPORTASI DAN KOMUNIKASI

Tabel 9.2.3 Arus Lalu Lintas Udara melalui Bandar Udara Adisutjipto menurut Tujuan Penerbangan di D.I. Yogyakarta, 2015
Table Amount of Air Traffic via Adisutjipto Airport by Flight Destination in D.I. Yogyakarta, 2015

Tujuan Penerbangan <i>Flight Destination</i>	Pesawat/Aeroplane		Penumpang/Passenger		
	Datang <i>Arrivals</i>	Berangkat <i>Departures</i>	Datang <i>Arrivals</i>	Berangkat <i>Departures</i>	Transit <i>Transit</i>
(1)	(2)	(3)	(4)	(5)	(6)
1. Balikpapan	2 165	2 145	304 801	291 623	668
2. Bandung	637	636	56 976	57 599	322
3. Banjarmasin	1 090	1 097	166 672	162 159	1
4. Batam	695	691	100 878	97 368	0
5. Denpasar	2 388	2 256	297 064	310 375	1 441
6. Jakarta/Halim Perdana Kusuma	282	382	37 158	36 613	0
7. Jakarta/Soekarno Hatta	10 421	10 363	1 494 043	1 457 273	2 263
8. Pontianak	850	819	91 598	86 791	2
9. Surabaya	2 005	1 986	133 224	140 198	807
10. Ujung Pandang	1 091	1 085	129 600	121 046	0
11. Lokal Lainnya	1 547	1 516	207 460	205 745	61
SubJumlah/SubTotal	23 171	22 976	3 019 474	2 966 790	5 565
1. Kuala Lumpur	698	696	96 191	81 966	4
2. Singapura	532	531	62 654	59 164	0
3. Lainnya	201	200	22 927	22 413	0
SubJumlah/SubTotal	1 431	1 427	181 772	163 443	4
Jumlah/ Total	24 602	24 403	3 201 246	3 130 233	5 569

Sumber : Bandar Udara Adisutjipto Yogyakarta
 Source : Adisutjipto Airport Authority of Yogyakarta
 Ket./Note :

TRANSPORTATION AND COMMUNICATION

Lanjutan

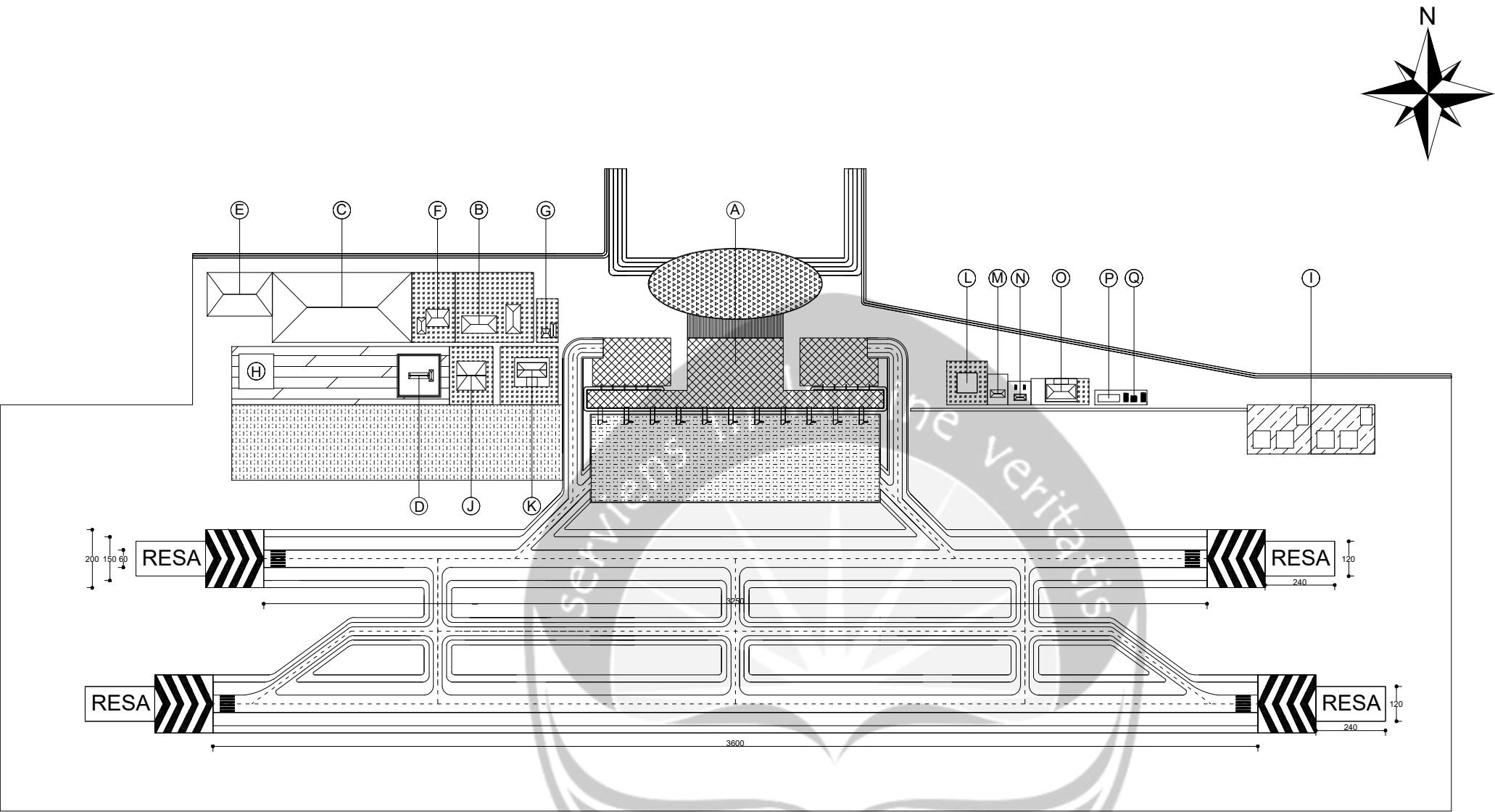
Tabel 9.2.3 Arus Lalu Lintas Udara melalui Bandar Udara Adisutjipto menurut Tujuan Penerbangan di D.I. Yogyakarta, 2015
Amount of Air Traffic via Adisutjipto Airport by Flight Destination in D.I. Yogyakarta , 2015

Tujuan Penerbangan <i>Flight Destination</i>	Bagasi/ <i>Baggage</i> (kg)		Barang/ <i>Cargo</i> (kg)		Paket Pos/ <i>Mail</i> (kg)	
	Bongkar <i>Unloaded</i>	Muat <i>Loaded</i>	Bongkar <i>Unloaded</i>	Muat <i>Loaded</i>	Bongkar <i>Unloaded</i>	Muat <i>Loaded</i>
(1)	(7)	(8)	(9)	(10)	(11)	(12)
1. Balikpapan	2 082 625	2 680 967	222 938	1 078 459	7	1 408
2. Bandung	278 740	317 263	2 433	2 332	0	0
3. Banjarmasin	1 002 832	1 368 198	116 995	491 188	101	0
4. Batam	870 156	906 242	55 791	609 619	3	0
5. Denpasar	2 251 571	2 379 489	319 026	566 520	147	1 518
6. Jakarta/Halim Perdana Kusuma	185 917	215 458	42 358	2 769	0	0
7. Jakarta/Soekarno Hatta	9 064 420	9 797 839	5 162 504	6 184 062	1 067	68 926
8. Pontianak	746 383	902 710	68 480	503 949	0	0
9. Surabaya	750 076	951 550	154 097	482 373	11	474
10. Ujung Pandang	1 098 869	1 310 176	252 210	516 656	95	1
11. Lokal Lainnya	1 673 430	1 921 848	218 753	663 814	700	0
SubJumlah/SubTotal	20 005 019	22 751 740	6 615 585	11 101 741	2 131	72 327
1. Kuala Lumpur	926 179	667 888	25 823	739 396	0	0
2. Singapura/Singapore	720 448	511 042	18 369	844 691	0	0
3. Lainnya/Others	203 976	134 433	644	1 711	0	0
SubJumlah/SubTotal	1 850 603	1 313 363	44 836	1 585 798	0	0
Jumlah/ Total	21 855 622	24 065 103	6 660 421	12 687 539	0	0

Sumber : Bandar Udara Adisutjipto Yogyakarta

Source : Adisutjipto Airport Authority of Yogyakarta

Ket./Note :



LEGEND :

A	PASSENGER TERMINAL	J	RESCUE AND FIRE FIGHTING SERVICE
B	CARGO TERMINAL	K	GROUND SUPPORT EQUIPMENT
C	HANGAR AND PLANE MAINTENANCE	L	OPERATION BUILDING
D	RESCUE AND FIRE FIGHTING SERVICE	M	GOVERNMENT BUILDING
E	AIRPORT MAINTENANCE	N	CLIMATOLOGY STATION
F	CRISIS CENTRE	O	ADMINISTRATION BUILDING
G	CATERING BUILDING	P	CIP BUILDING
H	ISOLATION AREA	Q	VIP BUILDING
I	PERTAMINA BUILDING		

A 3.1. Design Runway of New Yogyakarta International Airport



FINAL PROJECT



INTERNATIONAL CLASS PROGRAM
DEPARTEMENT OF CIVIL ENGINEERING
FACULTY OF ENGINEERING
UNIVERSITAS ATMA JAYA
YOGYAKARTA

FINAL PROJECT

RUNWAY GEOMETRIC
DESIGN OF NEW
YOGYAKARTA
INTERNATIONAL
AIRPORT

STUDENT IDENTITY

Hary Pesta Gultom 15012

LECTURE

Ir. Y. Lulie

PICTURE TITLE

RUNWAY AIRPORT DESIGN

SCALE 1:10000