

TUGAS AKHIR

**PUSAT EDUKASI DAN TERAPI ANAK PENYANDANG AUTISME DI YOGYAKARTA**



PROGRAM STUDI TEKNIK ARSITEKTUR  
FAKULTAS ARSITEKTUR DAN DESAIN UNIVERSITAS KRISTEN DUTA WACANA  
YOGYAKARTA  
2013

### LEMBAR PENGESAHAN

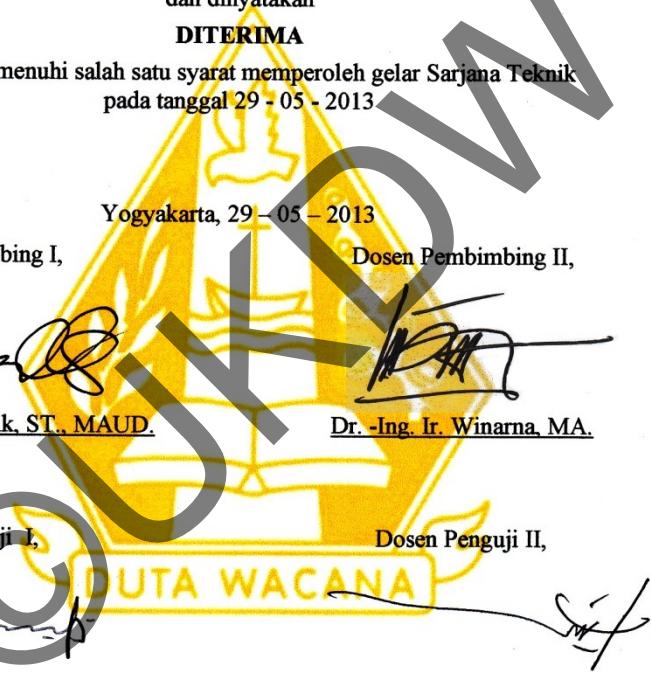
Judul : Pusat Edukasi dan Terapi Anak Penyandang Autisme di Yogyakarta  
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untuk memenuhi salah satu syarat memperoleh gelar Sarjana Teknik  
pada tanggal 29 - 05 - 2013

Yogyakarta, 29 - 05 - 2013

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**TUGAS AKHIR**

**PUSAT EDUKASI DAN TERAPI ANAK PENYANDANG AUTISME  
DI YOGYAKARTA**

Diajukan kepada Fakultas Arsitektur dan Desain Program Studi Arsitektur  
Universitas Kristen Duta Wacana – Yogyakarta  
Sebagai salah satu syarat dalam memperoleh gelar  
Sarjana Teknik

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Tanggal : 29 – 05 – 2013

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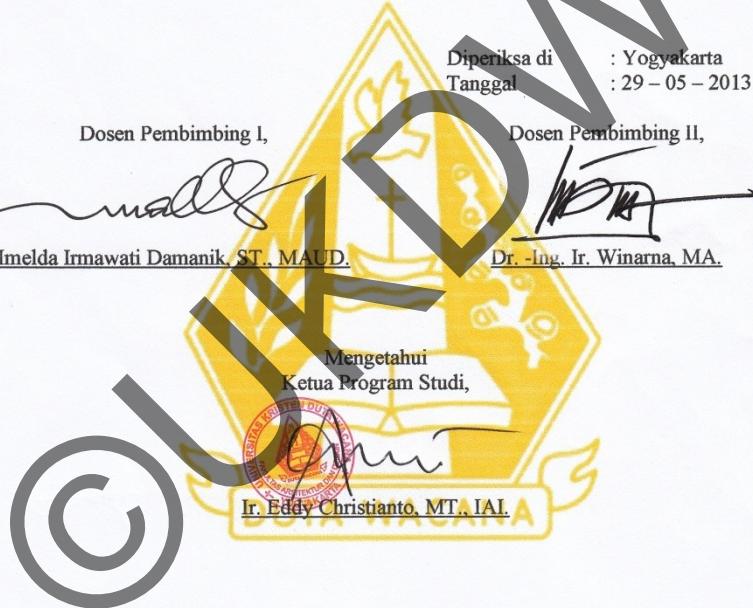
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**PERNYATAAN KEASLIAN**

Saya yang bertandatangan dibawah ini menyatakan dengan sebenarnya bahwa skripsi:

**PUSAT EDUKASI DAN TERAPI ANAK PENYANDANG AUTISME  
DI YOGYAKARTA**

Adalah benar-benar hasil karya sendiri. Pernyataan, ide, maupun kutipan langsung maupun tidak langsung yang berasal dari tulisan atau ide orang lain dinyatakan secara tertulis dalam skripsi ini pada catatan kaki dan daftar pustaka.

Apabila dikemudian hari terbukti saya melakukan duplikasi atau plagiasi sebagian atau seluruhnya dari skripsi ini, maka gelar dan ijazah yang saya peroleh diminta akan saya kembalikan kepada Universitas Kristen Duta Wacana Yogyakarta.

Yogyakarta, 29 - 05 - 2013.

MC. Vomy Susanti  
21.09.1328

DUTA WACANA

# DAFTAR ISI

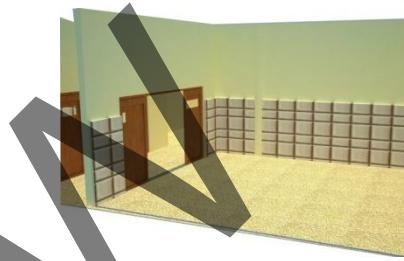
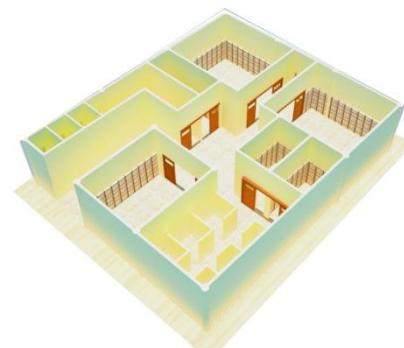
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### INITIAL IDEA TO DESAIN CENTRAL EDUCATION AND AUTISM THERAPY CHILDREN IN YOGYAKARTA

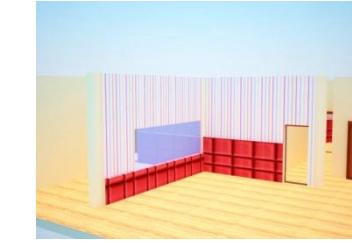
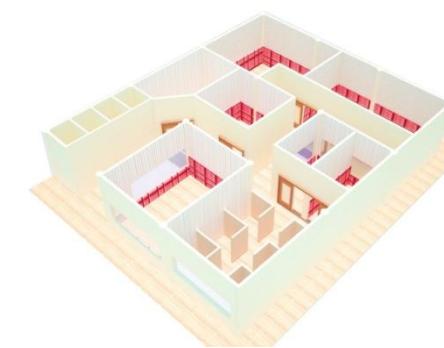
Currently the city of Yogyakarta has more than 500 children with autism. Autism itself is not a disease but a disorder in children characterized by the emergence of delays in cognitive, communication, interest in social interaction, and behavior. Children with autism need to be getting an education and therapy as early as possible to help children adapt to the surrounding environment. Therefore, there needs to be a place that can facilitate children to be able to get the education and therapy as needed.

According impaired sensory issues, autism can be divided into 3 (three) are: Hyper-Autism, Autism Interference-and Hypo-autism. Each type of disorder has sensory issues and education space needs different treatment. Thus, designing Central Education and Atism Therapy Children in Yogyakarta have to adjust to the presence of 3 different needs of children with autism.

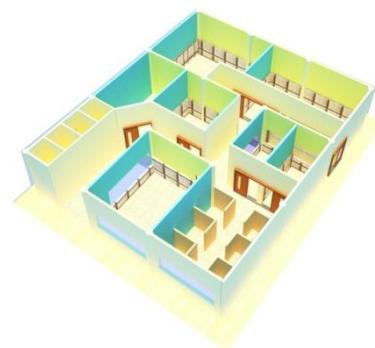
### 3 CLUSTER AUTISM ROOM's DETAIL



CLUSTER HYPER – AUTISM



CLUSTER HYPO – AUTISM



CLUSTER INTERFERENCE – AUTISM

### TRANSFORMATION DESIGN

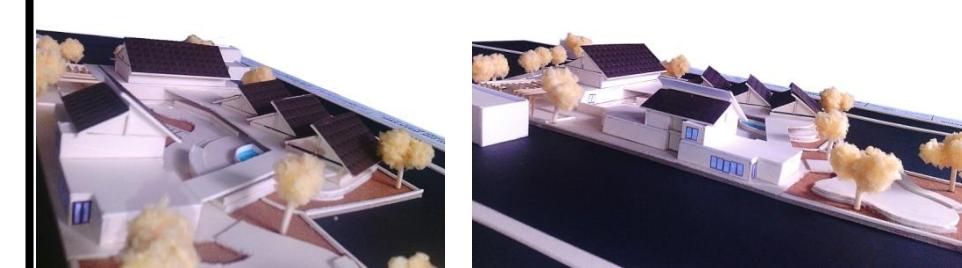
Design building of Central Education and Atism Therapy Children in Yogyakarta is tailored to the main idea, which is classified in accordance privacy zone building mass and function. Mass of the building site is divided into three masses are:

1. Building mass surrounding the Medical Area, Public Araa, and placed in front of your area to make it more easily accessible to the public because besides also close to the entrance and exit the building.
2. Mass of the building which includes 3 clusters of autism are put behind a public building has a level of privacy because semi-public. The building consists of 3 masses that merged into a single cluster.
3. Mass building covers an area of service and therapy with high stimulus placed in the public area behind and parallel to the 3 clusters of autism, so access is easy to reach from all sides, but it still does not reduce the level of privacy.

### CONCLUTION

The main purpose of designing Central Education and Atism Therapy Children in Yogyakarta are designing a building design that fit the needs of children with autism who have impaired sensory issues different buildings in order to function as a classroom and therapy could be useful for its users.

### MAKET MODEL

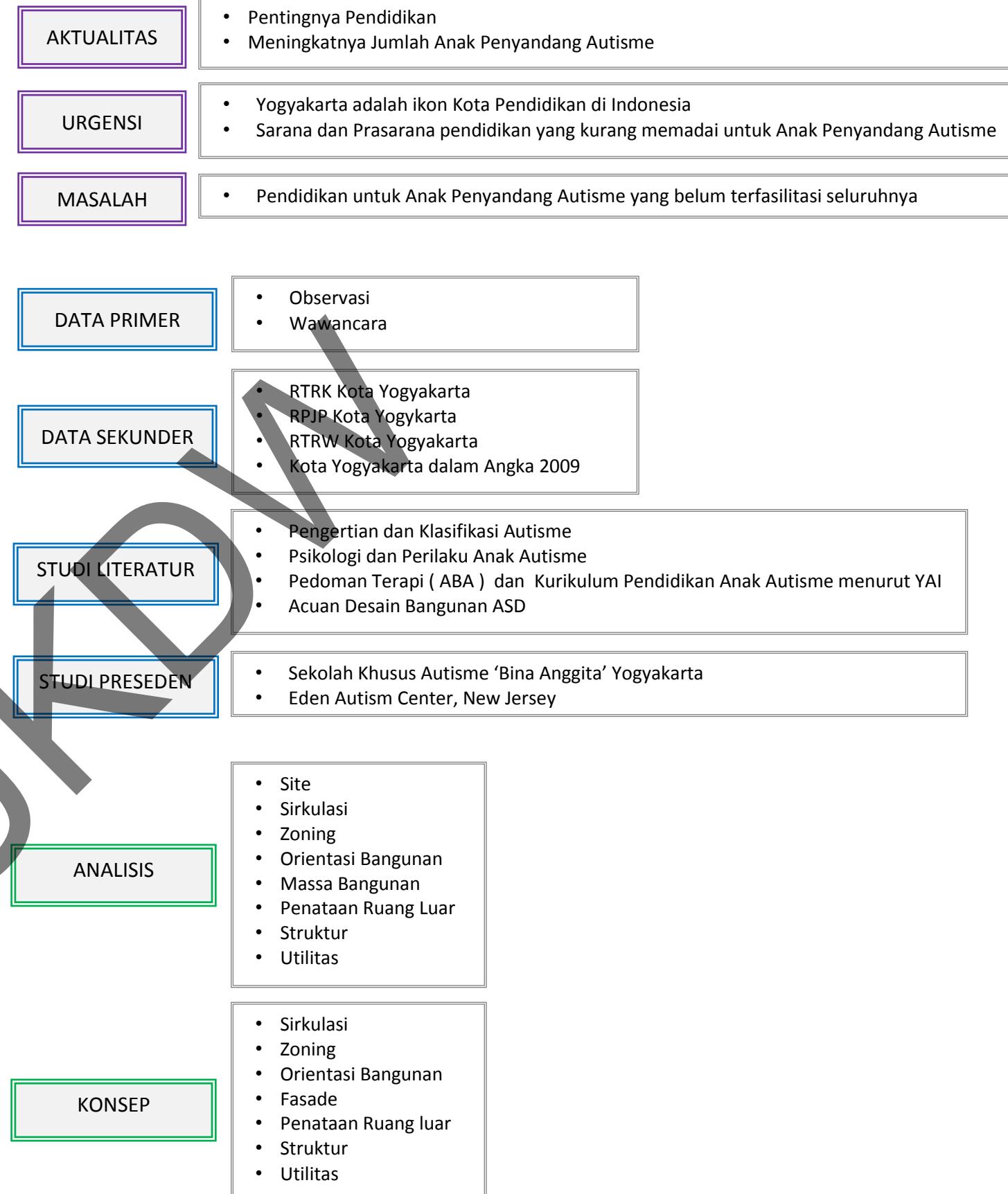
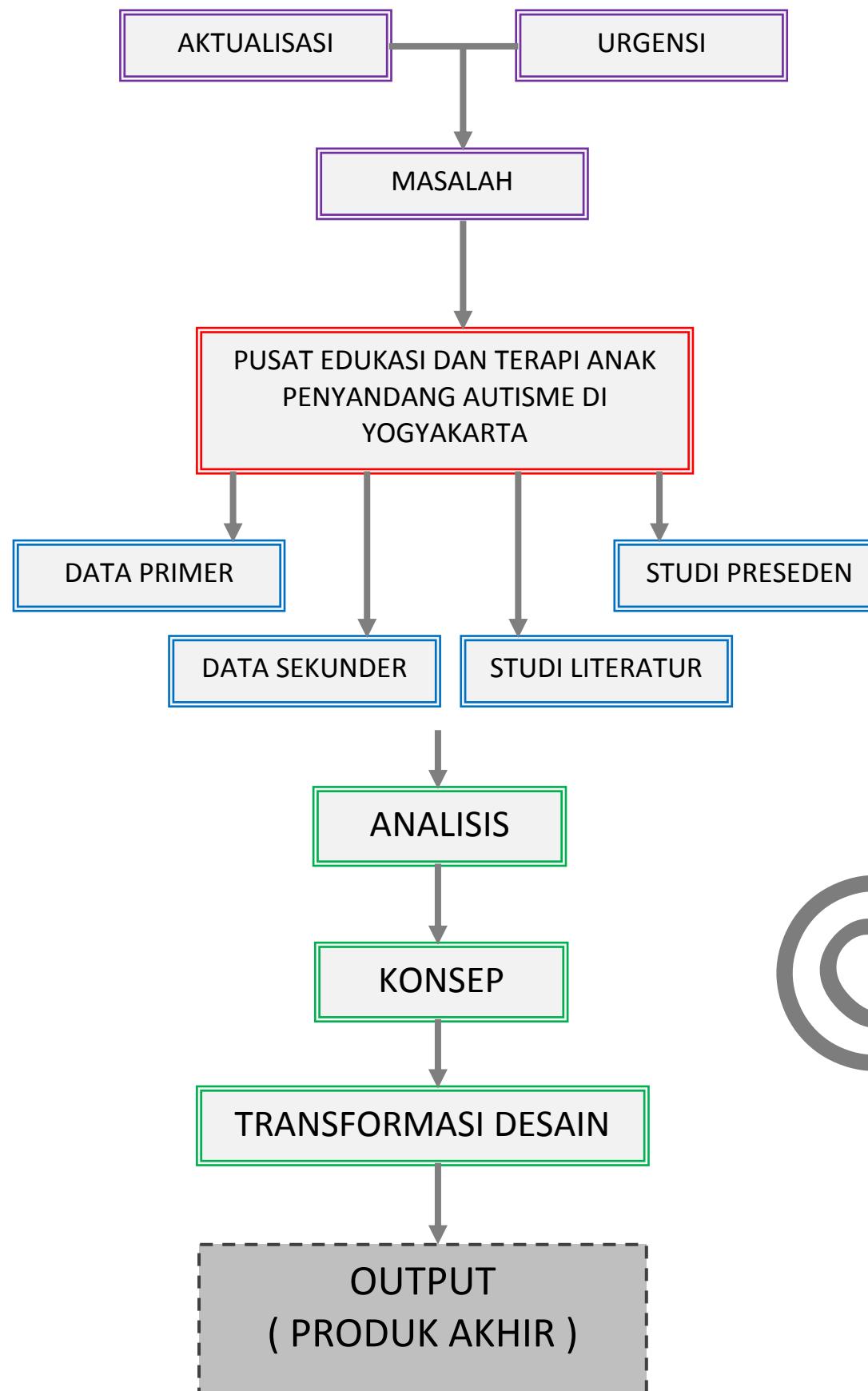


CENTRAL EDUCATION AND AUTISM THERAPY CHILDREN IN YOGYAKARTA

MC.VONNY SUSANTI / 2109.13.28

FAKULTAS ARSITEKTUR DAN DESAIN  
JURUSAN ARSITEKTURUniversitas Kristen Duta Wacana  
Yogyakarta 2013

## KERANGKA BERPIKIR



## LATAR BELAKANG

### STUDI KELAYAKAN

Penduduk menurut Kelompok Umur dan Jenis Kelamin di Kota Yogyakarta Population by Age Group and Sex in Yogyakarta City			
Kelompok Umur Month	Laki-laki Male	Perempuan Female	Jumlah Total
(1)	(2)	(3)	(4)
0 - 4	14,074	14,821	28,895
5 - 9	14,098	14,959	29,057
10 - 14	13,463	14,509	27,972
15 - 19	23,362	25,171	48,533
20 - 24	39,749	42,278	82,027
25 - 29	22,542	22,994	45,536
30 - 34	18,581	18,938	37,519
35 - 39	16,400	16,814	33,214
40 - 44	14,218	14,676	28,894
45 - 49	11,199	11,639	22,838
50 - 54	7,985	8,389	16,374
55 - 59	7,180	7,306	14,486
60 - 64	6,657	6,744	13,401
65 - 69	5,390	5,594	10,984
70 - 74	4,220	4,439	8,659
75 +	4,109	4,417	8,526
Jumlah/Total	223,227	233,688	456,915
2007	220,395	230,723	451,118

Gumber data : BPS Kota Yogyakarta  
Source of data: BPS-Statistics of Yogyakarta City  
Kota Yogyakarta Dalam Angka Tahun 2009

Penduduk menurut Kelompok Umur dan Jenis Kelamin di Kota Yogyakarta tahun 2008			
Kelompok Umur	Laki-laki	Perempuan	Jumlah Total
0 - 4	14.074	14.821	26.895
5 - 9	14.098	14.959	29.057
10 - 14	13.463	14.509	27.972
Jumlah anak umur 0-14 tahun			85.924

#### Perhitungan Potensi Jumlah Penyandang Autisme dari umur 0-14 tahun

Perbandingan anak autis dengan anak normal = 1 : 150 – 200

( Sumber : Menkes,2008 & dr. Widodo, 2006 )

Maka rata-ratanya =  $150 + 200 / 2 = 175$

Jadi perbandingan rata-rata = 1 : 175 orang

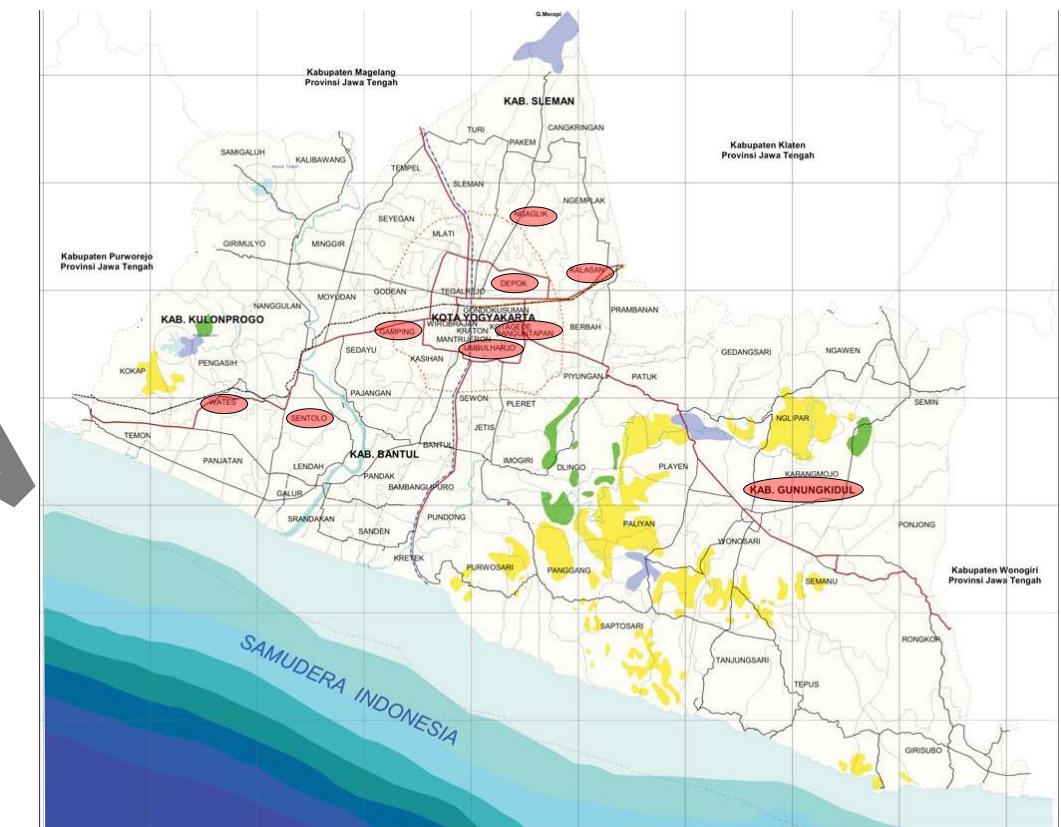
Jumlah anak ( umur 0-14 tahun ) di D.I.Yogyakarta = ± 85.924 ribu jiwa

Potensi jumlah anak penyandang autisme

= jumlah anak ( umur 0-14 tahun ) x perbandingan

=  $85.924 \times 1/175 = \pm 490$  orang anak

#### Persebaran Pendidikan dan Terapi Anak Penyandang Autis di D.I.Yogyakarta



Sumber : Hasil Oahan Pribadi

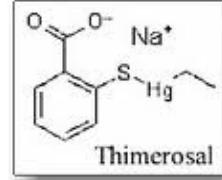
#### Faktor Penyebab Tingginya Jumlah Anak Penyandang Autisme di Kota Yogyakarta



Polusi lingkungan



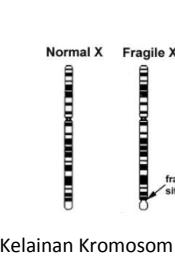
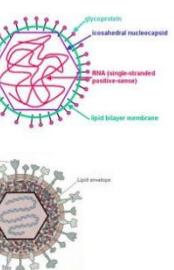
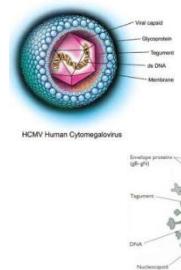
Kontaminasi Merkuri



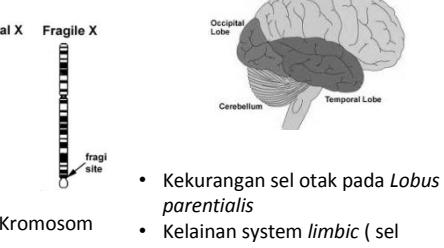
Kontaminasi Vaksinasi



Keracunan Zat aditif



Virus CMV, Rubella, & Herpes



Sumber : Kompas, 2010.

Banyaknya jumlah Anak Penyandang Autisme di D.I.Yogyakarta (± 490 )

( TIDAK SEBANDING )

Jumlah sarana pendidikan dan terapi Anak Penyandang Autis di D.I.Yogyakarta  
(± 10 SKA dengan total kapasitas ± 172 anak )  
(± 68 SLB Campur dengan total kapasitas ± 204 anak )

No	Nama Sekolah	Lokasi	Kapasitas
1.	SKA Bina Anggita	Banguntapan, Bantul	32
2.	SLB Dian Amanah	Ngaglik, Sleman	25
3.	Rumah sahabat	Mangkusuman, Yogyakarta	13
4.	Citra Mulia Mandiri	Kalasan, Sleman	25
5.	SKA Fajar Nugraha	Depok, Sleman	16
6.	SLA Fredofius	Seturan, Yogyakarta	20
7.	Rumah Autistik ABA	Umbulharjo, Yogyakarta	16
8.	Yayasan Sayap Ibu	Condongcatur, Sleman	6
9.	SLB Suharjo Putro	Gunungkidul	9
10.	Putra Harapan Bunda	Wates, Kulonprogo	10
	Jumlah		± 172

PROBLEM ?

## STUDI LITERATUR

Beberapa aspek penting dalam perancangan Pusat Edukasi dan Terapi Anak Penyandang Autisme :

- Klasifikasi Autisme
- Karakter Anak Autisme
- Pedoman Terapi (ABA) dan Kurikulum Pendidikan Anak Autisme menurut YAI
- Architecture Design Guidelines for Autism

### AUTISME :

- ❖ Salah satu kelompok dari gangguan pada anak yang ditandai dengan munculnya gangguan dan keterlambatan dalam bidang kognitif, komunikasi, ketertarikan pada interaksi sosial, dan perilakunya (Veskarisyanti, 2008).

DESAIN LINGKUNGAN UNTUK ANAK AUTISME ( Vogel, 2008 ) :

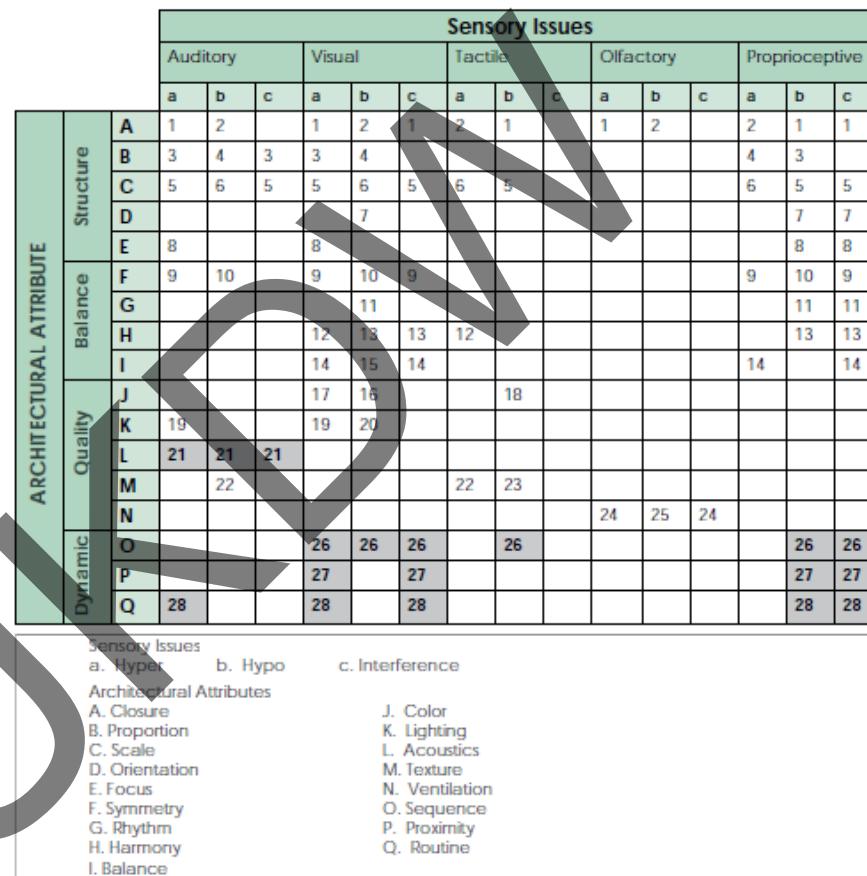
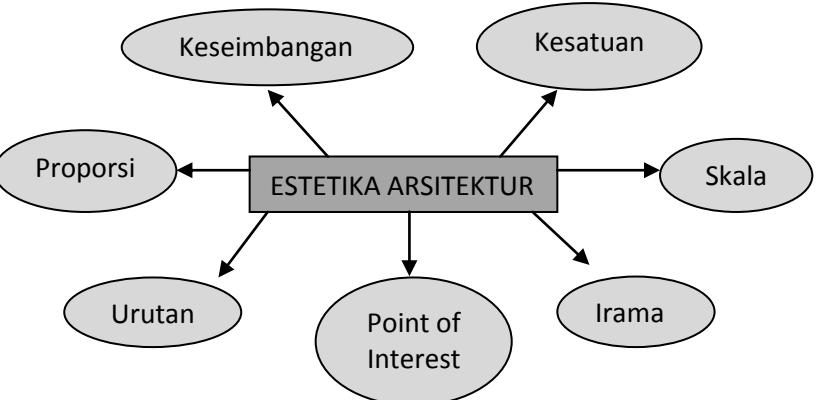
1. Fleksibel / Adaptable
2. Non-threatening
3. Non-distracting
4. Predictable
5. Controllable
6. Sensory-Motor attuned
7. Safety
8. Non-institutional

### PEDOMAN TERAPI AUTISME

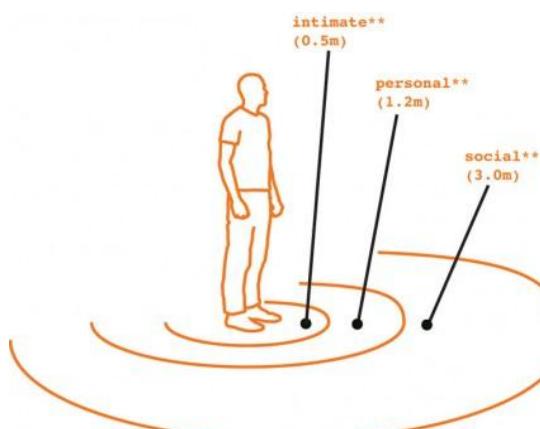
KURIKULUM ABA

KURIKULUM YAI

Kemampuan Mengikuti Tugas/Pelajaran
Kemampuan Imitasi (Meniru)
Kemampuan Bahasa Reseptif
Kemampuan Bahasa Ekspresif
Kemampuan Pre-Akademik
Kemampuan bantu diri



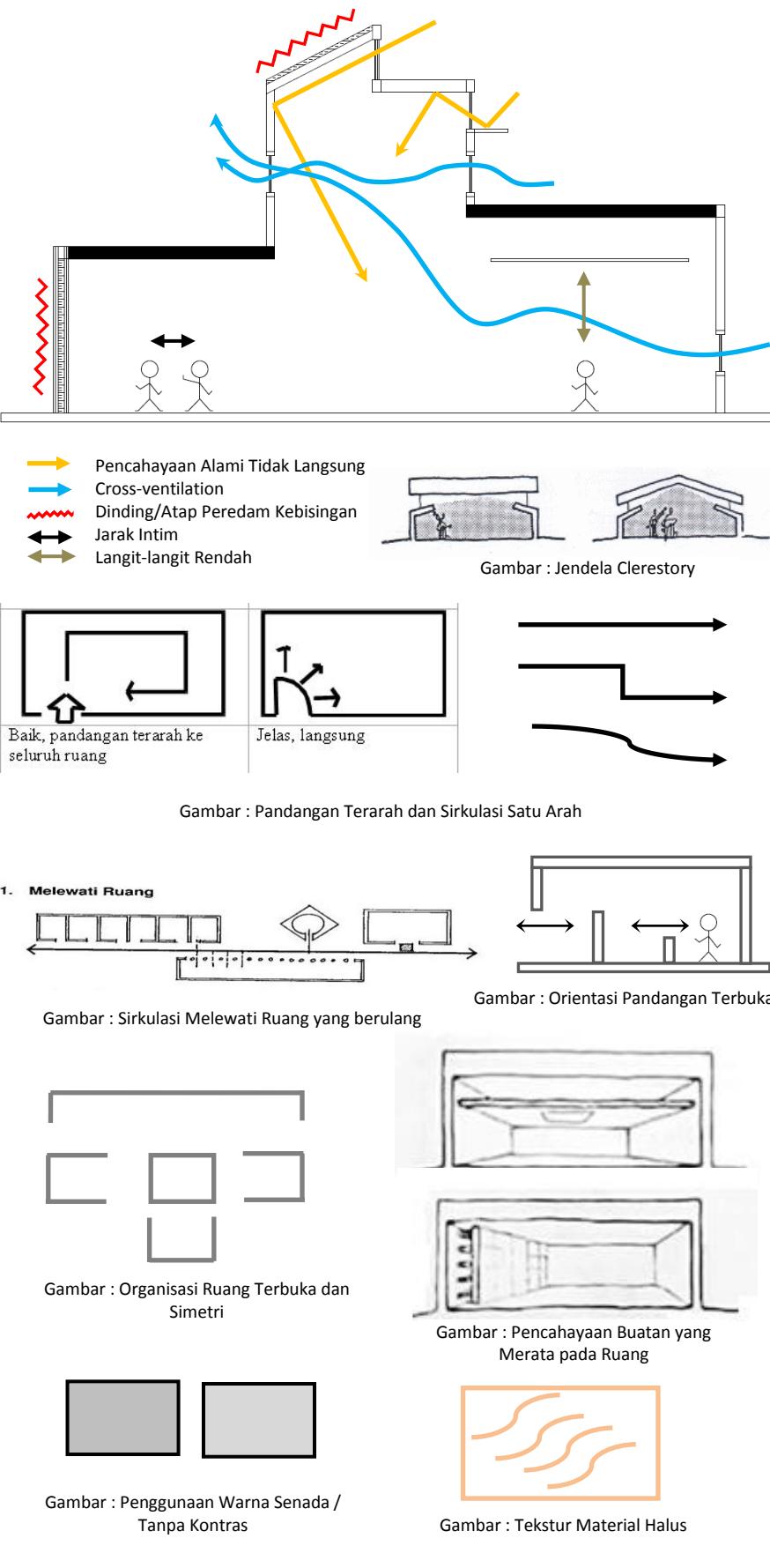
Sumber : Jurnal Concepts of Design Intervention for the Autistic User



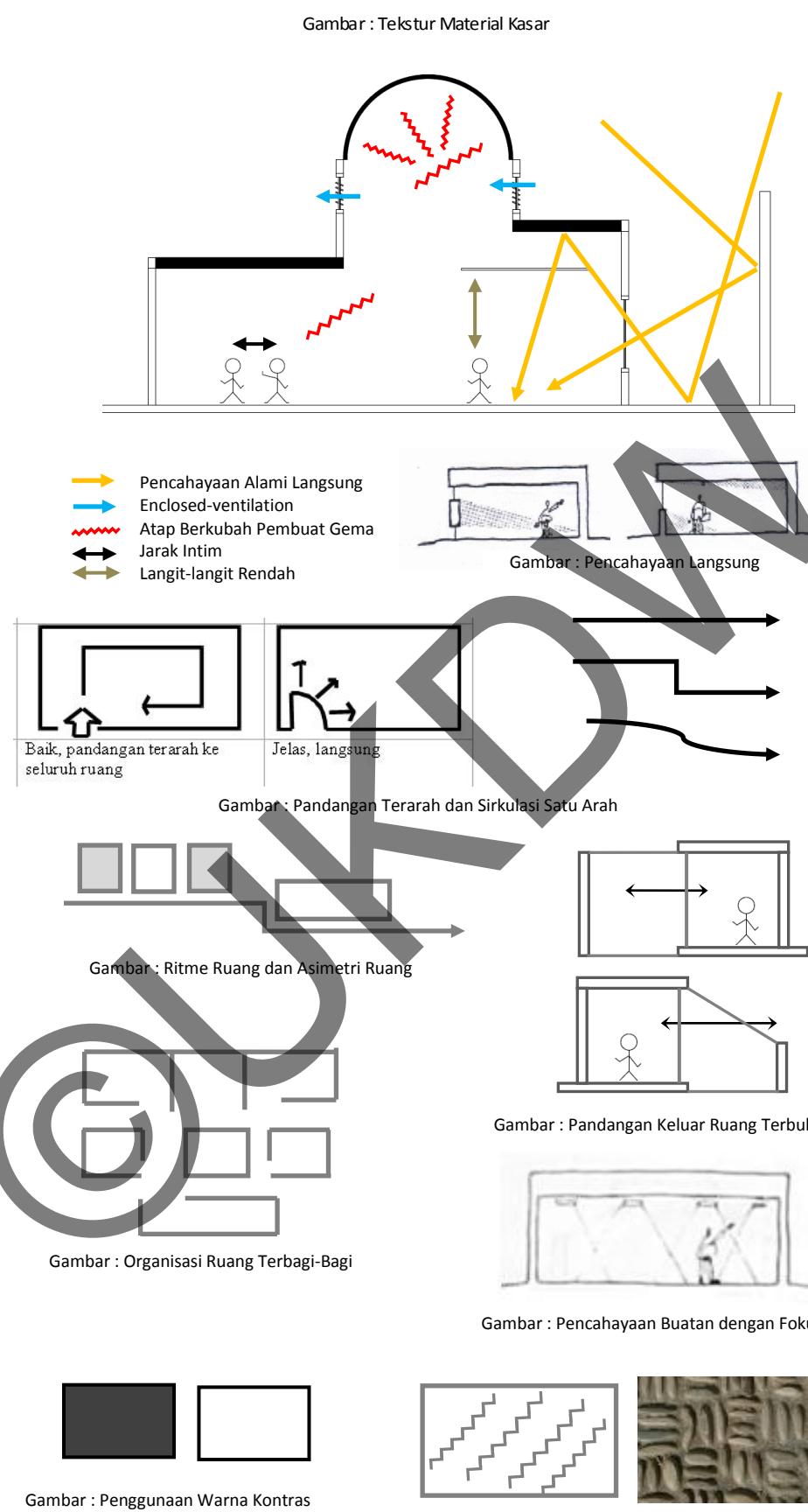
Gambar : Personal Space & Territoriality

#	Design Guideline	Suggested Objective and User
1.	High enclosure and containment	1) to reduce external visual and acoustical distraction for the hyper-auditory and hyper-visual 2) to provide tactile stimulation via tight spaces and containment for the hypo-tactile 3) to create visual focus in cases of visual interference 4) to reduce olfactory intrusion via ventilation for the hyper-olfactory
2.	Low enclosure and openness	1) to increase opportunities for acoustical stimulation for the hypo-auditory 2) to provide visual stimulation for the hypo-visual 3) to reduce sense of containment for the hyper-tactile
3.	Low ceilings and moderate proportions	1) to reduce echoes for the hyper-auditory 2) to reduce visual distortion and illusions of space for the hyper-visual 3) to promote balance for the hypo and interference-proprioceptive 4) to create a more acoustically controllable environment for the interference
4.	High ceilings and exaggerated proportions	1) to increase echoes and auditory stimulation for the hypo-auditory 2) to create visual illusory stimulation for the hypo-visual 3) to stimulate the proprioceptive sense of space for the hyper-proprioceptive auditory
5.	Use of intimate scale	1) to reduce echoes for the hyper-auditory 2) to create a controllable auditory environment for the interference auditory 3) to create a controllable and manageable space for the hyper and interference visual 4) to increase tactile stimulation from boundary proximity for the hypo-tactile 5) to increase proprioceptive stimulation from boundary proximity for the hypo-proprioceptive 6) to create a controllable environment for the interference auditory and proprioceptive
6.	Use of open scale	1) to create auditory stimulation through echoes for the hypo-auditory 2) to create visual stimulation through spatial expanse for the hypo-visual 3) to relieve over stimulation from spatial boundaries for the hyper-tactile and hyper-proprioceptive
7.	Orientation towards external views and elements of interest	1) to create focus and attraction for the hypo-visual 2) to instill balance and direction for the hypo-proprioceptive
8.	Use of activity focus to organize space	1) to increase attention span and reduce distractibility for the hyper-auditory and visual 2) to create a behavioural and geometric point of reference for the hypo and interference proprioceptive
9.	Symmetrical organization	1) creates predictability for the hyper-visual 2) creates acoustical balance for the hyper-auditory 3) increases sense of centre and balance for the hypo and interference proprioceptive 4) creates a controllable environment for the interference visual
10.	Asymmetrical organization	1) creates auditory and visual stimulation for the hypo-auditory and visual 2) creates proprioceptive stimulation for the hypo-proprioceptivables
11.	Use of visual or spatial rhythm	1) to create visual stimulation and tracking opportunities for the hypo-visual 2) to create predictability and coherence to the spatial environment for the hypo and interference
12.	Visually harmonious space with no contrast or discord	1) to create a visually neutral space for the hyper-visual 2) to create a neutral tactile space for the hypo-tactile
13.	Visually unharmonious space using accents and contrasts	1) to create visual stimulation for the hypo and interference visual 2) to create proprioceptive stimulation for the interference and hypo-proprioceptive
14.	Use of dynamic and statically balanced spaces	1) to create orientation and stability for the hyper-proprioceptive and visual and visual as well as the interference proprioceptive and visual
15.	Use of unbalanced spaces	1) to create visual stimulation for the hypo-visual
16.	Use of bright colours	1) to create visual stimulation for the hypo-visual
17.	Use of neutral colours	1) to create serenity for the hyper-visual
18.	Use of warm colours	1) to create psychological warmth for the hypo-tactile
19.	Indirect natural lighting	1) minimize glare and distracting views for the hyper-visual 2) less distracting than buzzing artificial light for the hyper-auditory
20.	Direct natural lighting and views	1) creates visual stimulation for the hypo-visual
21.	Noise and echo-proofing	1) creates a conducive environment for the hyper-auditory 2) removes the distracting opportunity of self-stimulation through echoes for the hypo-auditory 3) creates a neutral auditory background for the interference auditory
22.	Use of smooth textures	1) calms the hypo-tactile 2) creates echo and reverberation stimulation for the hypo-auditory
23.	Use of rough textures	1) stimulates the hypo-tactile
24.	Cross-ventilation	1) reduces smells and odours for the hyper-olfactory
25.	Enclosed ventilation	1) may help contain scents during aromatherapy for the hypo-olfactory
26.	Organized compartmentalization using visual cues	1) helps orient and adjust the hyper-visual 2) helps stimulate to action the hypo-visual 3) helps organize the interference visual 4) creates necessary boundaries for the hypo-tactile 5) helps orient the hypo and interference proprioceptive
27.	Spatial organization according to sensory characteristics	1) helps orient and adjust the hyper-visual 2) helps organize the interference visual 3) helps orient the hypo and interference proprioceptive
28.	Use of one-way circulation patterns to capitalize on routine	1) helps orient and adjust the hyper-visual 2) helps organize the interference visual 3) helps orient the hypo and interference proprioceptive 4) helps create predictability in general across the spectrum, particularly the hyper-auditory

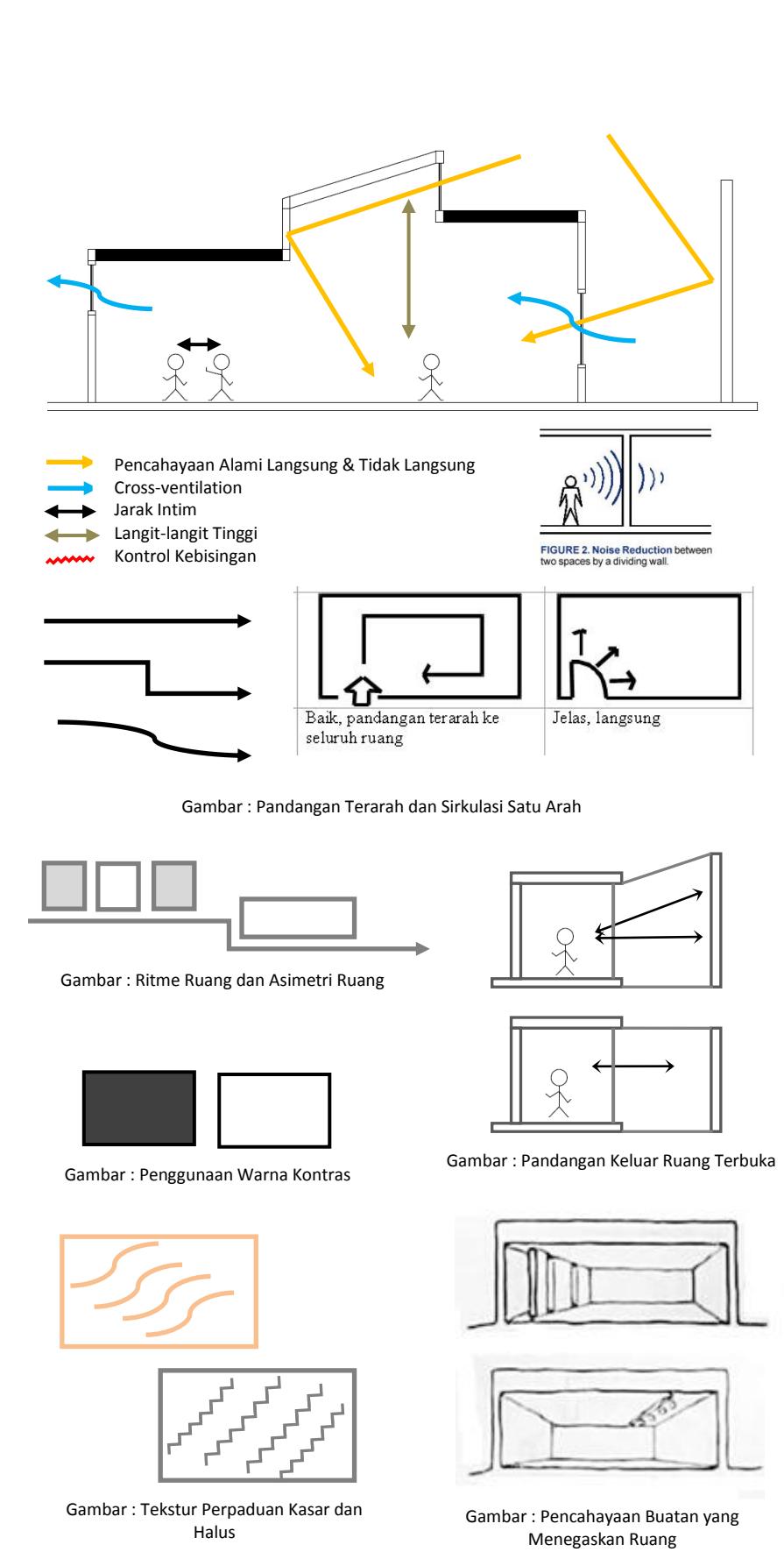
## HYPER-AUTISM



## HYPO-AUTISM



## INTERFERENCE - AUTISM



Sumber : Buku Pedoman Konsep

## STANDART MEDICAL ROOM

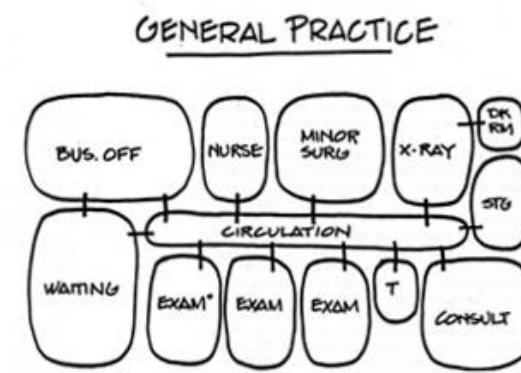
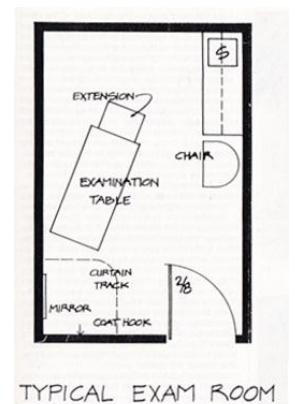


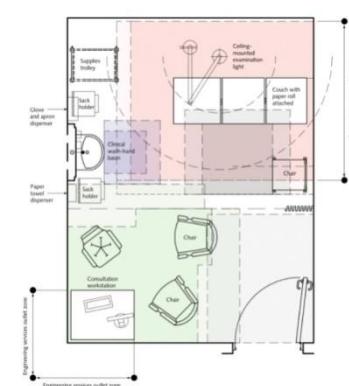
Fig. 3-1. Schematic diagram of a general practice suite.  
Sumber : The Design of Medical and Dental Facilities



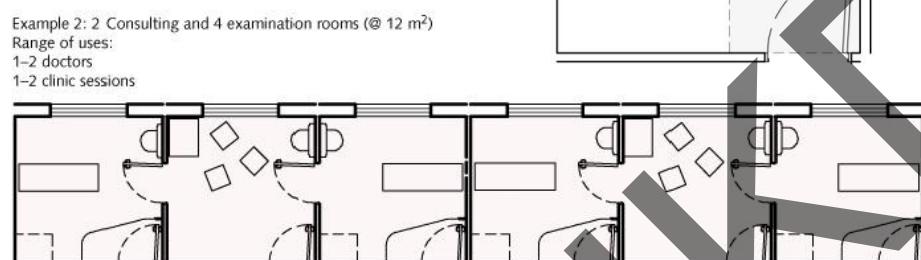
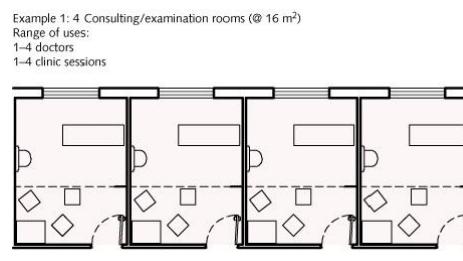
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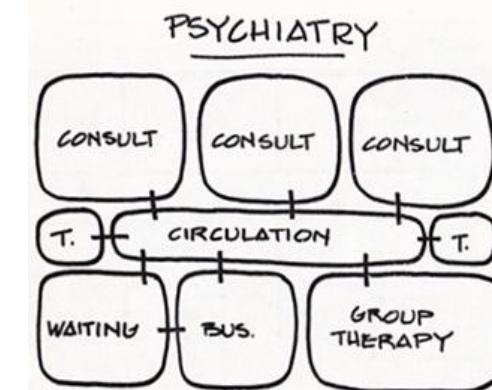
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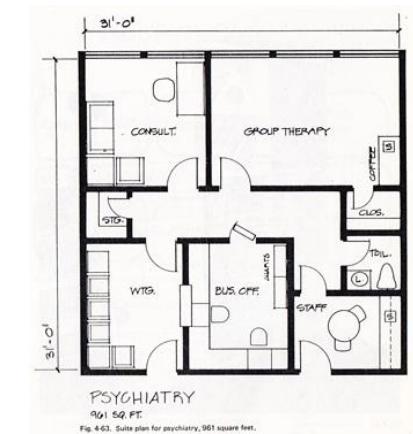
Gambar : Consulting exam room double sided 2  
Sumber : spaceforhealth.nhs.uk



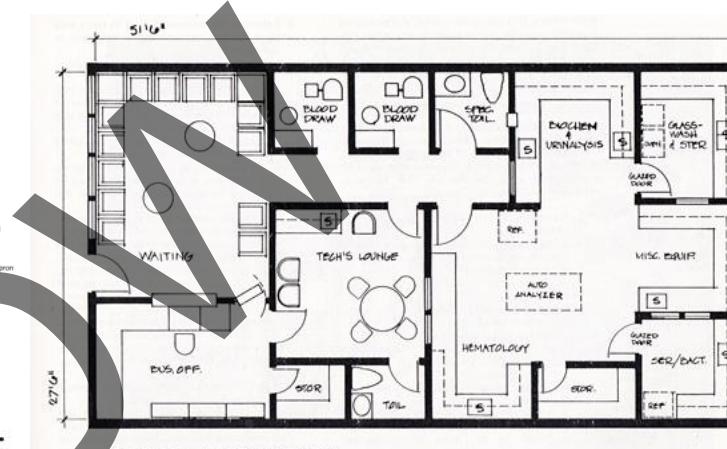
Sumber : spaceforhealth.nhs.uk



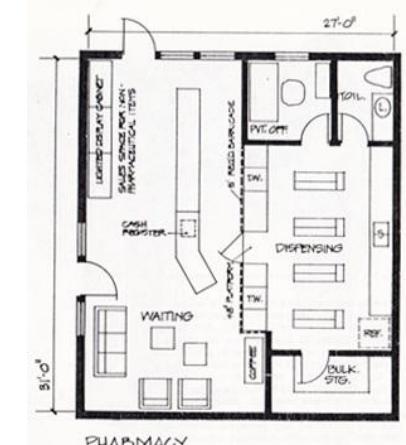
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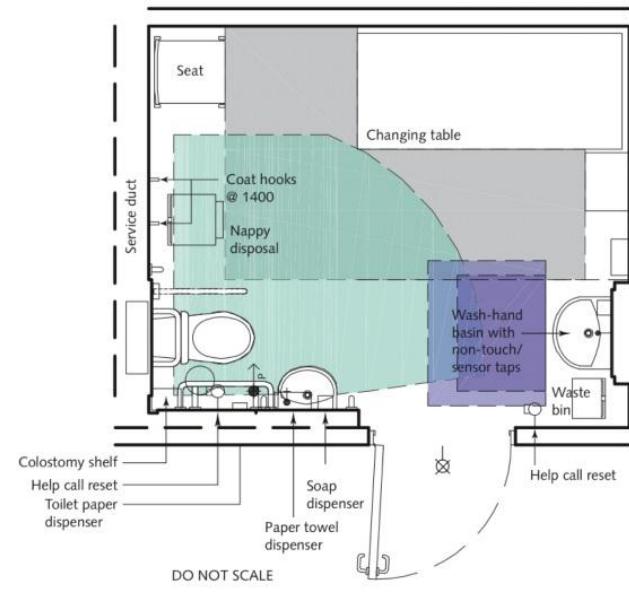
Sumber : The Design of Medical and Dental Facilities



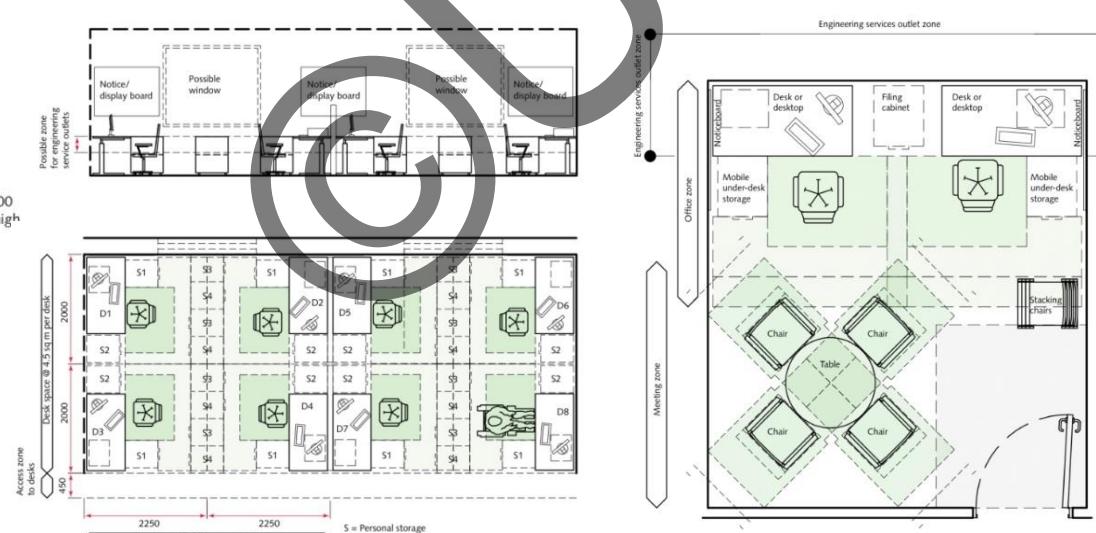
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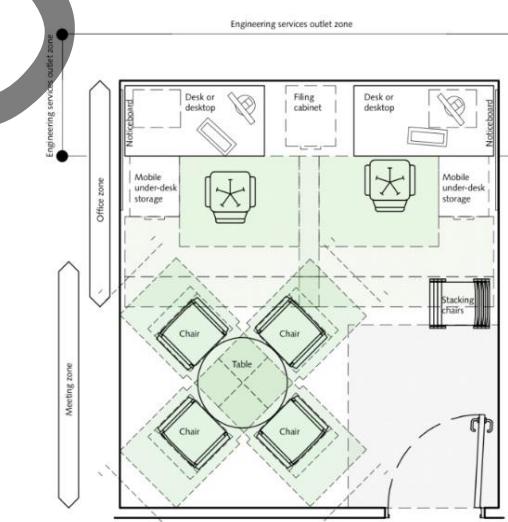
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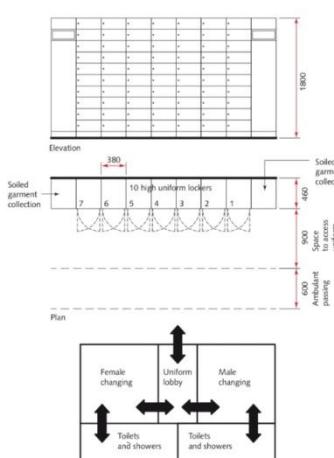
Gambar : Changing room with toilet  
Sumber : spaceforhealth.nhs.uk



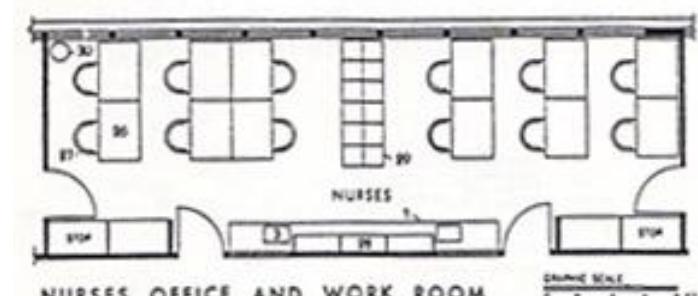
Gambar : Admin Workstation  
Sumber : spaceforhealth.nhs.uk



Gambar : Office meetingroom  
Sumber : spaceforhealth.nhs.uk

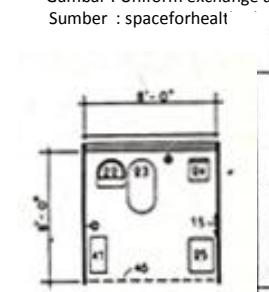


Gambar : Uniform exchange area  
Sumber : spaceforhealth



Sumber : Hospitals, Clinics and Health Centers

1. Work counter with cabinets below
2. Lavatory with gooseneck spout and knee control
3. Sink with gooseneck spout and knee control
26. Single pedestal desk
27. Executive chair
28. Wall cabinet
29. Clothes locker, 15" x 18" x 60"
30. Wastepaper receptacle



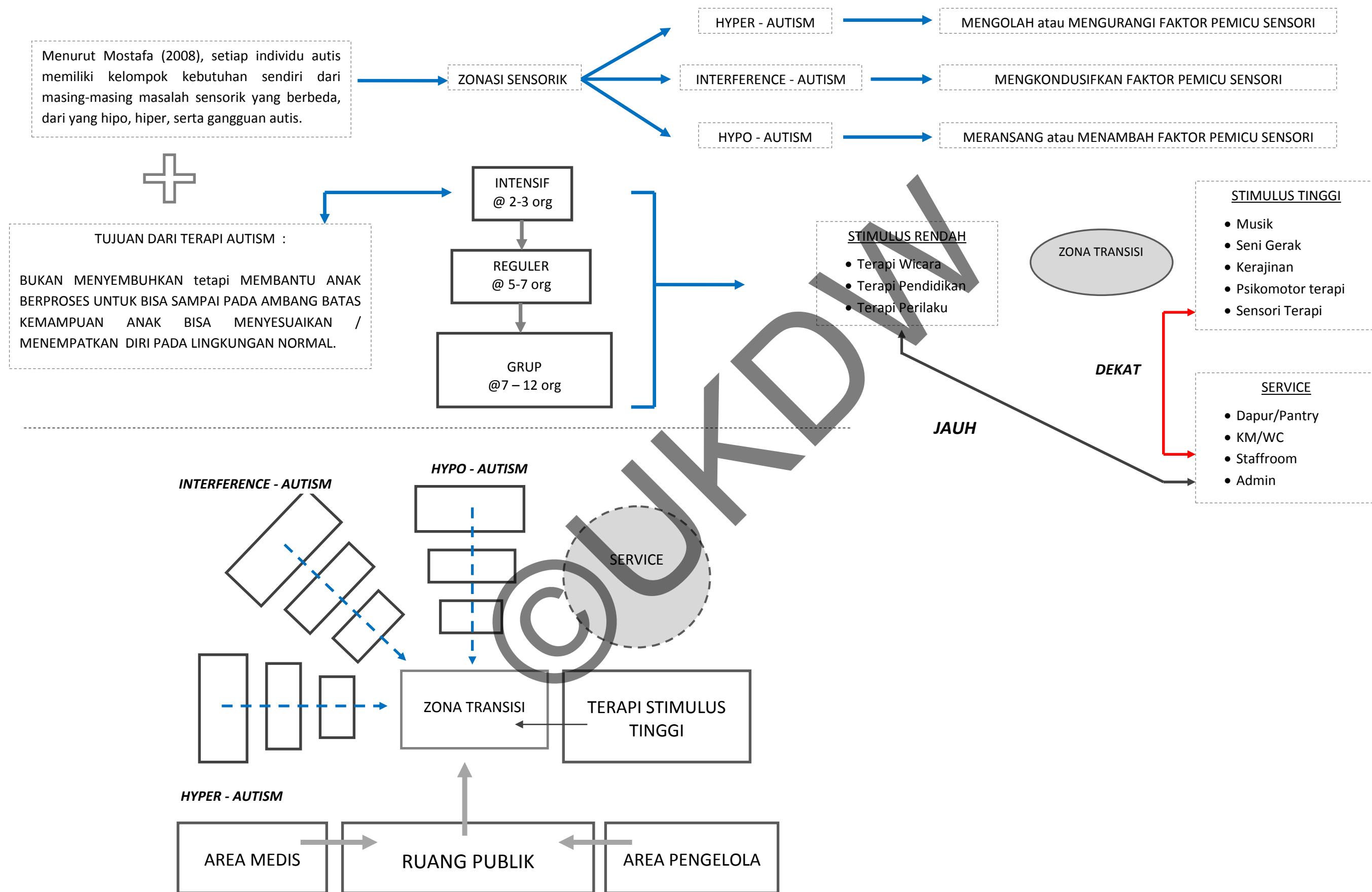
EXERCISE AREA

Sumber : Hospitals, Clinics and Health Centers

1. Posture Mirror
2. Parallel Bars
3. Steps
4. Stoll Bars
5. Gym Mat
6. Stationary Bicycle
7. Sayer Head Sling Attached to Ceiling
8. Pulley Weights
9. Shoulder Wheel
10. Gym Mat Hooks

## KONSEP PERANCANGAN

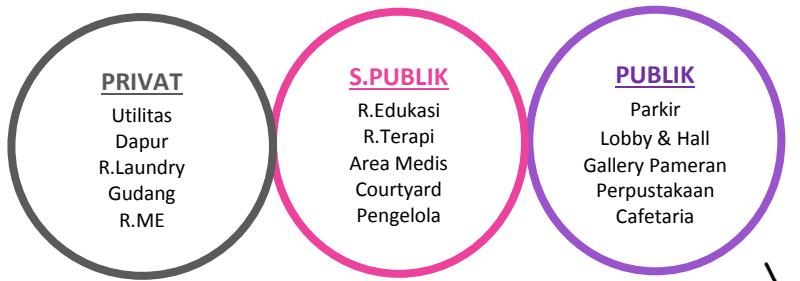
### KONSEP ZONASI SENSORIK AUTISTIC



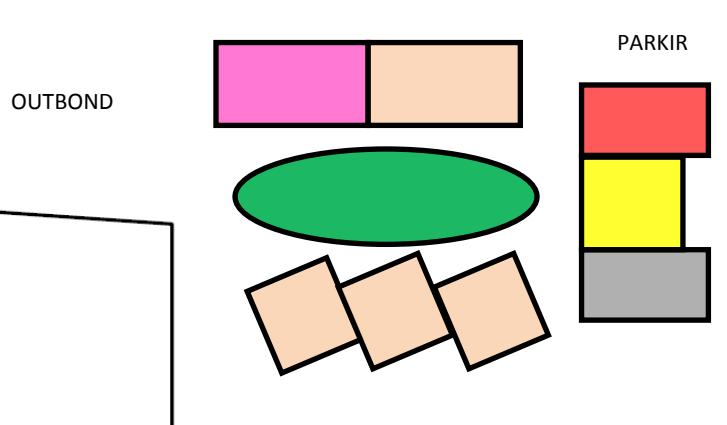
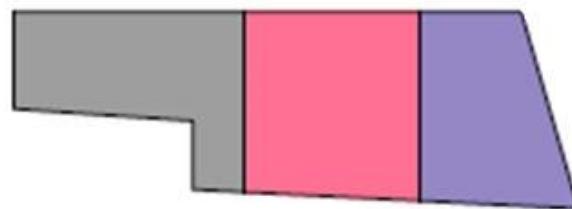
©UKDW

## KONSEP PERANCANGAN

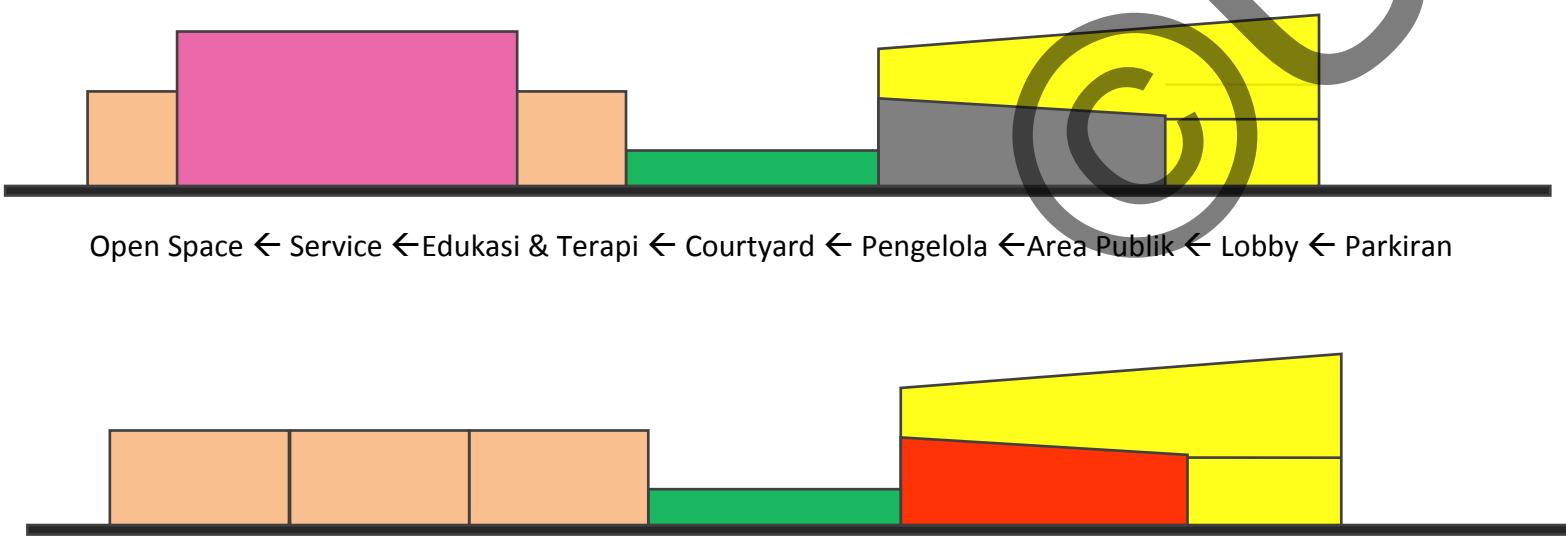
### KONSEP ZONING HORIZONTAL



### KLASIFIKASI SIFAT FUNGSI

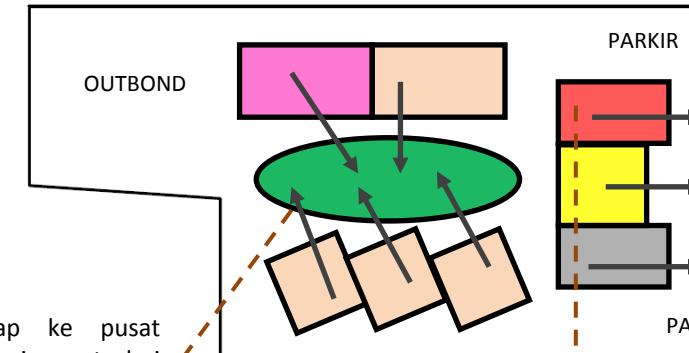


### KONSEP ZONING VERTIKAL



Open Space ← Service ← Edukasi & Terapi ← Courtyard ← Area Medis ← Area Publik ← Lobby ← Parkiran

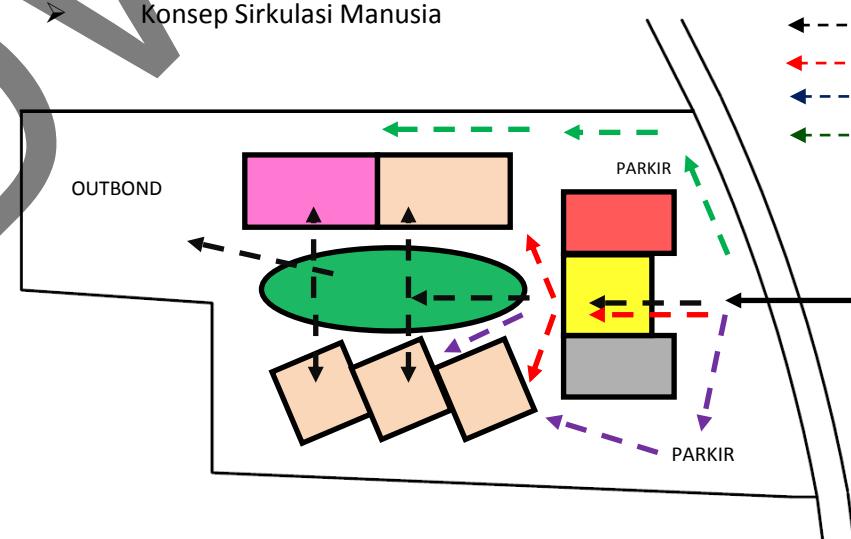
## KONSEP ORIENTASI MASSA BANGUNAN



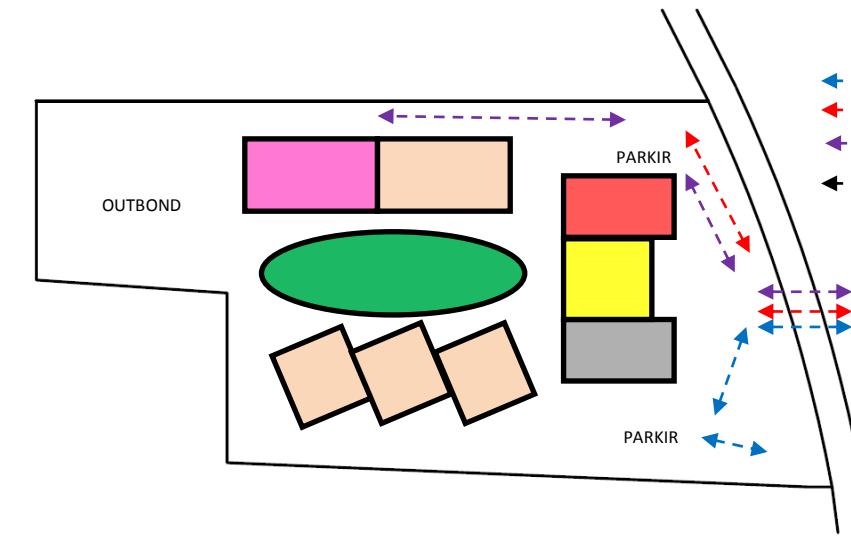
Massa Bangunan menghadap ke pusat courtyard / playground sebagai pusat dari pertemuan semua sirkulasi untuk menghidupkan suasana semua area.

Orientasi massa bangunan yang berada di area publik seperti Area Medis dan Pengelola menghadap kearah jalan untuk menonjolkan fasade bangunan.

### KONSEP SIRKULASI



### KONSEP SIRKULASI KENDARAAN



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