

IT IS NEVER TOO LATE TO FALL IN LOVE

else
2.7

GIEL 2.1

How
2.7

sustainable
URBAN
NEIGHBOURHOODS

3 key dimensions:

> sustainable development $\begin{cases} \text{economic} \\ \text{social} \\ \text{environmental} \end{cases}$
How to achieve:

> Economic sustainability + high enough pop. density

↳ support local businesses

↳ keep transport and infrastructure \$ low

> Social Sustainability

↳ keep population size small

↳ shared community spaces

facilitate $\Rightarrow$ regular social interactions

> Environmental Sustainability

↳ ample protection for nature

↳ facilities to minimise waste and $\uparrow$ recycling

↳ Energy and water efficient designs

YOU WILL BE DRILLIANT.

Geography EOY Revision << Geog. in Everyday Life >>

Sustainable urban neighbourhoods.

Development $\begin{cases} \text{economic} \\ \text{social} \\ \text{political} \end{cases}$ process $\xrightarrow{\text{results in}}$ improvement of standard of living for a population

Countries classified according to level of development

Economic indicator: ① Gross Domestic Product (GDP) per capita

$\rightarrow$ total value of all final goods and services produced by a country in a year
total population

$\rightarrow$ developed country = higher GDP per capita

$\rightarrow$ usually have a larger number of productive industries and

a well-developed service industry

Social indicators: ① Life expectancy $\rightarrow$ influenced by — quality of healthcare

— access to clean water, sanitation, food supply
and living conditions

$\rightarrow$ developed country = higher life expectancy

② Adult literacy rate $\rightarrow$ higher literacy rate $\rightarrow$ generates more professionals

E.g. NZ — highly developed country

$\downarrow$
high adult literacy rate of 99%

who can contribute their skills
and expertise $\Rightarrow$ drive country's economy

$\rightarrow$ developed country = higher adult lit. rate

Sustainable Development: development that

3 key dimensions $\begin{cases} \text{ensure higher standards of living are achieved.} \\ \text{meets the needs of the present population by achieving high standard of living for all} \\ \text{ensures the ability of future generations to meet their own needs} \end{cases}$

Economic Social Environment

$\Rightarrow$ overfocus on one dimension may lead to a neglect of the others $\rightarrow$ all are important

E.g. Singapore Green Plan 2030

$\rightarrow$ launched in 2020 — nationwide movement — advance SG's national agenda on sustainable development

$\rightarrow$ 5 key pillars — bring about high standards of living for current & future gen. of S'poreans.

E.g. UN Sustainable Development Goals $\rightarrow$ to achieve the 2030 Agenda for Sustainable Development

$\rightarrow$ achieve high SOL and peace for current and future gens.

▶ How urban neighbourhoods achieve ECONOMIC SUSTAINABILITY.

- > To ensure all human beings can enjoy prosperous, fulfilling lives and economic progress can occur in harmony with nature.

Attained through:

- > ensure neighbourhood has a high enough population density

① Support local businesses

- ↳ sufficient demand for goods & services → local businesses able to sustain themselves
- ↳ residents take up employment → earn income + increase SOL

② Keep transport and infrastructure costs low

- ↳ neighbourhood densely populated → buildings, objects, amenities close to each other
↓
residents need not travel far → keep transport costs low.
- ↳ transportation infrastructure located close to one another
- ↳ connecting transport infrastructure need not be built or built over long distances.
(co-development)
- ↳ transportation costs for residents are lowered/minimised.

▶ How urban neighbourhoods achieve SOCIAL SUSTAINABILITY.

- > To ensure that societies are inclusive and resilient, where residents have a voice

inclusive playgrounds

- ↳ residents feel included & have a sense of shared identity ^{voice heard} E.g. Vote what colour HDB walls to be painted

- > Fostered by having shared community spaces → promote regular social interactions

Attained thru:

- ① keep population size small → facilitates regular interactions among residents

- ↳ Shared community spaces → residents from diff backgrounds and hobbies → come tgt and

foster positive relationships

- ↳ Regular interactions btwn residents ^{are} important → help maintain a culture of open communication, mutual

discuss decisions affecting the neighbourhood.

- ↳ respect and understanding

- ↳ reduce misunderstandings and conflicts

- ↳ day-to-day, mundane issues can be resolved locally with an adequate neighbourhood structure

- E.g. In SG, Residents' Networks (RN) → promote neighbourliness and community cohesiveness amongst residents

- each neighbourhood is divided into smaller designated zones and residents are encouraged to join the network

- regular activities organised at the designated zonal levels to cater to small population size in the zone.

- encourage residents to voice their opinions and participate in decision-making processes regarding issues affecting their neighbourhood, enhancing their social well-being.

- How urban neighbourhoods achieve ENVIRONMENTAL SUSTAINABILITY. <sup>ample protection for nature
facilities that support waste minimisation & recycling
energy and water-efficient design approaches for buildings and landscapes</sup>
- > To sustainably manage natural resources and take urgent action on climate change to support the needs of the present and future generations.

Attained thru:

① Ample protection for nature

- So wildlife can thrive in our urban spaces
 - human-wildlife coexistence can be fostered
- } nature shld be protected

E.g. NP Board → developed multiple strats. aimed



at safeguarding SG's habitats and ecosystems for long-term sustainability → Biodiversity in urban neighbourhoods can also be maximised thru concerted efforts: aimed to protect existing native species, habitats, ecosystems

↳ implementation of species conservation and recovery programmes → re-establish species

- > Have a wide variety of habitats (e.g. street trees, pocket parks, roof gardens) instead of uniform areas of grass.
- > Diff varieties and species of trees and plants → provides adequate shelter and food for a wider variety of wildlife to thrive → maximising biodiversity

E.g. 44 Nature Ways in SG → connects areas of high biodiversity across SG.

② Having facilities that support waste minimisation and recycling

① > conveniently located recycling facilities and infrastructures

- ↳ Blue recycling bins around estate
 - ↳ new BTO flats have recycling chutes in their homes
- } encourage residents to recycle.

② > Neighbourhood-scale recycling activities organised by either residents or town council → ^{encourage} waste recycling

E.g. Town Council → put up posters and banners → educate and encourage residents to recycle properly

③ Energy and water-efficient design approaches for buildings and landscapes.

- > to minimise the use of resources
- > Done by safeguarding nearby nature areas and embracing smart technology & eco-friendly features

E.g. Treelodge @ Punggol → plenty of greenery

- ↳ reduces surrounding air temp → ↓ need for ^{usage of} air-con / fans
- ↳ enhances aesthetics → creates a conducive living environment for residents

E.g. Heat-reflective paint (Cool paint) under HDB's Green Towns Programme

↳ slower temp up to 2°C → reduce energy consumption

E.g. Rainwater used for block washing of void decks & corridors → reduce overall water

consumption
instead of using a new source of H₂O

COMMON HAZARDS

GIZEL 2.3

in Urban Neighborhoods

> Hazards 101 └─ man-made
└─ natural

> Fire Hazards └─ burn injuries
└─ CO poisoning
└─ resp. system damage

└─ man-made] impacts

└─ natural]

> Property damage

> Air pollution Hazards

└─ Burning vegetation

└─ Exhaust emissions

> Health impacts

└─ asthma in kids

└─ lung function decline in adults

> Traffic Hazards

└─ Speed-related

└─ red-light running

└─ drunk driving

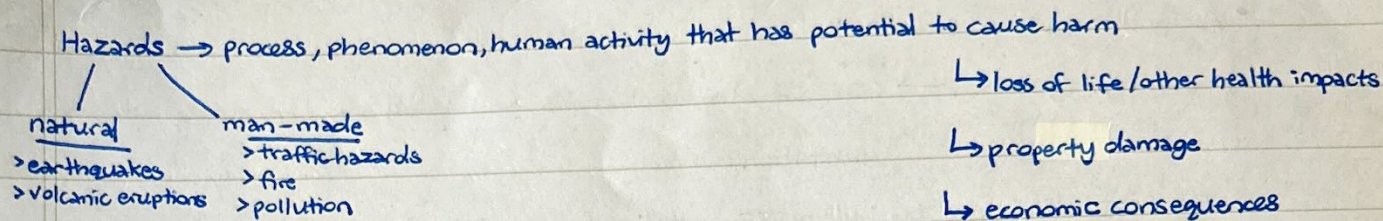
> Health Impacts

injuries & fatalities

-esp in elderly pedestrians and motorcyclists

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Common hazards in urban neighbourhoods.



► FIRE HAZARDS and their impacts [ans: cause → impact/outcome]

- Fires occur in neighbourhoods > Naturally → wildland fires - due to dry weather → dry veg. → fuel for fires when lightning strikes
- due to : > Man-made → technological or industrial conditions
 - dangerous procedures
 - infrastructure failures
 - specific human activities
- Fires occur in : > Residential Areas → unattended cooking fires - oil self-ignites (Personal Mobility Devices PMDs) → ignites nearby flammable materials → fire
 - burning incense → faulty electrical appliances and wiring
- > Non-residential Areas → commercial
 - industrial
 - social
 - communal places

- Impacts of fire hazards
 - health impacts
 - property damage

- HEALTH IMPACTS

① Burn injuries → when unable to evacuate in time

→ severe burn injuries → may lead to disabilities or death

② Carbon monoxide poisoning → when high levels of carbon monoxide and carbon dioxide released

→ cause headache, dizziness, during a fire

weakness, confusion

→ even loss of consciousness and death

↓
make it more difficult for ppl to escape a fire

③ Damage to respiratory systems

→ irritants from a fire (e.g. acid gases, smoke) → permanent damage to resp. system

→ Smoke inhalation → cause breathing difficulties and suffocation → may lead to death

- PROPERTY DAMAGE

> Fires can destroy/burn down commercial or residential properties → goods, furniture, imp't documents destroyed

> Money required to repair and rebuild the properties damaged in the fire → further costs incurred

↓
economic losses

► AIR POLLUTION HAZARDS and their impacts

the presence of contaminant or pollutant substances in the air

• Air pollution occurs due to:

> Burning vegetation → ^{when} CO₂ and other pollutants are released into the atmosphere when vegetation burns

E.g. first half of 2019, SG had ~555 vegetation fires → 56% ↑ in vegetation fires from 2018
↓
resulted in slight deterioration in air quality → due to drier and hotter weather

> Industrial and motor emissions → due to ↑ in car ownership and usage → ↑ in air pollution hazards

↳ vehicles produce significant amts of exhaust emissions → e.g. nitrogen oxides, carbon monoxide, other pollutants
↓
deterioration of air quality in urban areas

- HEALTH IMPACTS : respiratory infections, heart diseases, lung cancer

pollutants may lead to
- lung function decline
- lung cancer

• Nitrogen dioxide — emitted in areas of high vehicle traffic

↳ High levels of exposure to nitrogen dioxide → higher risks of asthma in children ①

• PM_{2.5} (soot, smoke, dust, liquid droplets) — produced in urban neighbourhoods

↳ PM_{2.5} can enter bloodstreams and lodge deep in human organs

↳ cause lung function decline in older adults ②

► TRAFFIC HAZARDS and their impacts

arise from accidents due to irresponsible motorists who put others at risk

• Traffic hazards occur due to:

> Speeding / Speed-related accidents → lack of adherence to speed limits

> Red-light running

> Drink driving — driving w excess alcohol in blood

E.g. in 2021, there were a total of 969 speeding-related traffic accidents

153 accidents caused by drink driving

- HEALTH IMPACTS : injuries and fatalities

> People involved in a traffic accidents → suffer serious injuries → lead to disabilities or loss of life

E.g. 2021 → total of 100 traffic accidents in SG that resulted in fatalities, 8 caused by

drink-driving

* elderly pedestrians and motorcyclists → account for a high % of traffic accidents

resulting in injuries or death

IT IS NEVER TOO LATE TO FALL IN LOVE

also see
2.1

GIEL 2.4

What are we
doing to

BUILD
SUSTAINABLE
Urban
neighbourhoods

> Environmental Stewardship

↳ promote volunteerism

↳ partnership of sectors

> Disaster Risk Management

↳ reduce neighbourhood's exposure to hazards

↳ reduce vulnerability of ppl & properties to hazards

(Emergency preparedness (warning systems (Insurance schemes

Building

\$\$\$ aid

> Community Resilience

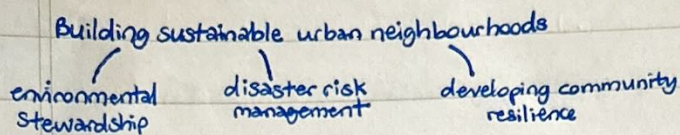
↳ strengthen relationship among residents

+ raise awareness of potential hazards

↳ develop ability to organise & equip themselves

w resources

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▶ ENVIRONMENTAL STEWARDSHIP

the actions taken by individuals or groups → to protect, care for, responsibly use the environment
to pursue environmental and/or social outcomes

→ to reduce the negative impacts of human activities on the natural environment

Actions should seek to:

- Conserve natural resources
- preserve the existing natural environment
- repair the damages and reverse the negative impacts caused by humans to ensure its sustainability

Environmental sustainability can be achieved:
→ promoting volunteerism
→ partnership of sectors

① Promoting Volunteerism

Eco-friendly lifestyles

↳ events
↳ spread awareness to public

↳ to share knowledge with others about the importance of healthy ecosystems

- ↳ Helps residents become more aware of what they can and should do to responsibly use and protect the natural environment

E.g. Encouraging residents to lead eco-friendly lifestyles (e.g. reducing waste) and take ownership of their living environment

> Volunteers of 'Keeping SG Clean' events organising by Clean and Green Singapore

- ↳ clean-up events that encourage public cleanliness
- ↳ raise public awareness on resource conservation (3Rs) in neighbourhoods

> Ground-led initiatives w NParks → Friends of the Parks

↳ 2019 → communities took part in the design, development and management of SG's parks and green spaces — co-creating more than 50 parks across SG over next 5 years

↳ through collaboration and cooperation b/w residents → green spaces are enhanced

↓
providing opportunities for biodiversity to thrive

② Partnership of Public and Private Stakeholders in Environmental Stewardship Efforts

Residents can partner with public and private stakeholders → diff. stakeholders have diff. expertise

↳ all need to be actively involved.

to enhance environmental stewardship efforts

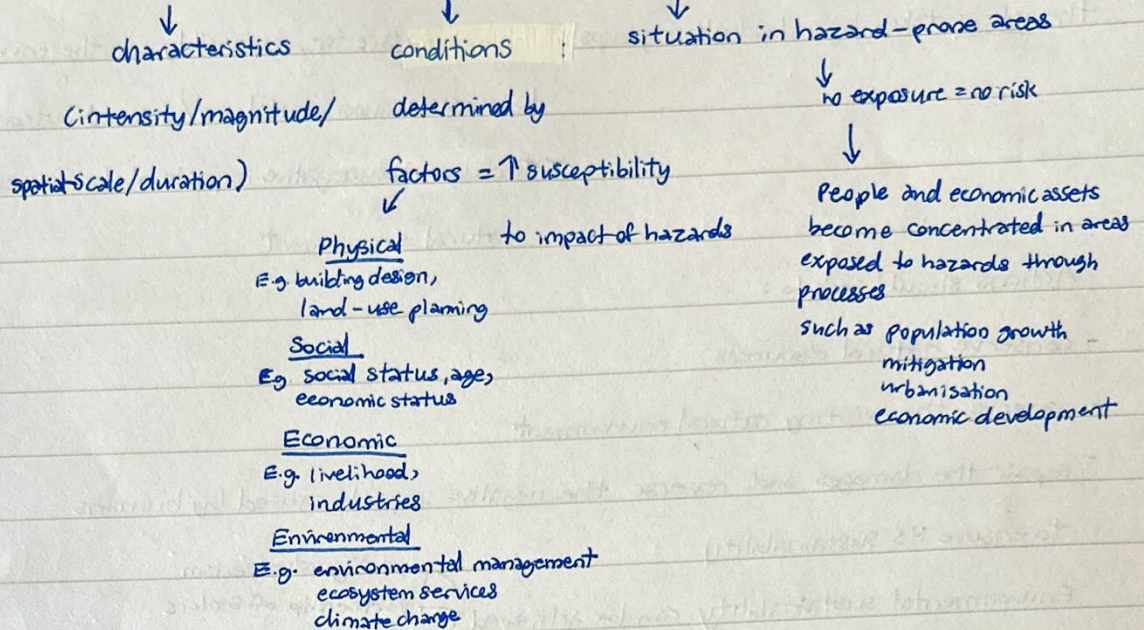
E.g. To ensure that recycling is optimised

- Public → NEA → educates residents on the importance of waste recycling & how & what they should recycle
- Residents → play a vital role in the proper recycling of their waste
- Private → provide recycling facilities

▶ DISASTER RISK

> Disaster risk → the likelihood of damage to properties, injuries and loss of lives from a disaster in a given period of time

> Disaster risk = nature of hazard + vulnerability + exposure



> Types of Hazards: natural / man-made

- Biological ^(m-m) → direct threat to health (disease outbreak)
- Environment ^(m-m) → threat to nature (pollution)
- Geological ⁽ⁿ⁾ → earthquakes, volcanoes, land slides
- Hydrometeorological ⁽ⁿ⁾ → typhons, flooding (water) (atmosph./climate)
- Technological ^(m-m) → nuclear, cyber-warfare

▶ DISASTER RISK MANAGEMENT

the plans and actions that are implemented to prevent new risks from happening, reduce existing risks and manage disaster risks

> Disaster risk management strategies aim to reduce:

- a neighbourhood's exposure to hazards → warning systems — land-use planning, timely evacuation
- the vulnerability of ppl and properties to hazards → preparedness measures, knowledge and awareness raising, regulatory codes

> SG's disaster risk management strategies primarily focus on:

- Improving residents' emergency preparedness to respond to natural and technological hazards

E.g. SCDF → conducts a Community Emergency Preparedness Programme (CEPP)

↳ focuses on key lifesaving skills and impt emergency procedures

- implementation of monitoring and warning systems (reduce vul.)

E.g. SCDF → Public Warning System (PWS) → warn public of imminent threats that may endanger lives and property

↳ Insurance Schemes
↳ provide financial aid
following house
fires

(reduce vulnerability)

natural/man-made
disasters

▶ COMMUNITY RESILIENCE

the ability of a community to resist, adapt to and recover from impacts of disasters in a timely and efficient manner.

It can be developed by:

- ① Strengthening relationships among residents and raising their awareness of potential hazards
 - > need ^{widespread} support and long-term participation from residents
 - ↳ neighbourhood management plans can be effective and sustainable
 - > residents encouraged to get to know their neighbours → can depend on one another during an emergency.

* Neighbour relations are highly diverse, varying from one group to another,
↳ may occasionally be problematic

E.g. People's Association (PA)

↳ organises a wide range of community activities → foster positive relationships amongst

↓
active aging,
emergency preparedness,
community sports

residents living in the neighbourhood

community resilience
developed thru

- ② Developing residents' ability to organize themselves and equip themselves with resources to resist, adapt and recover from a disaster.
 - ↳ respond faster and more efficiently to hazard

Organise themselves:

- > residents can participate in a participatory, inclusive planning process that involves community leaders, civil society organisations and the government.

Equip themselves:

- > residents actively participate in urban infrastructure projects → minimise potential hazards in the neighbourhood
 - ↳ can better understand the risks and adaptation options to communicate to the planners and government.

E.g. Community First Responders (CFR)

E.g. Total defence framework.

Strengthening relationships among residents & raising awareness of pot. hazards

↓ as a result

develop residents' ability to organise ppl and resources to adapt to hazards & recover from disasters

∴ community resilience helps to build sustainable urban neighbourhoods