

Construction By-products Resource Information System

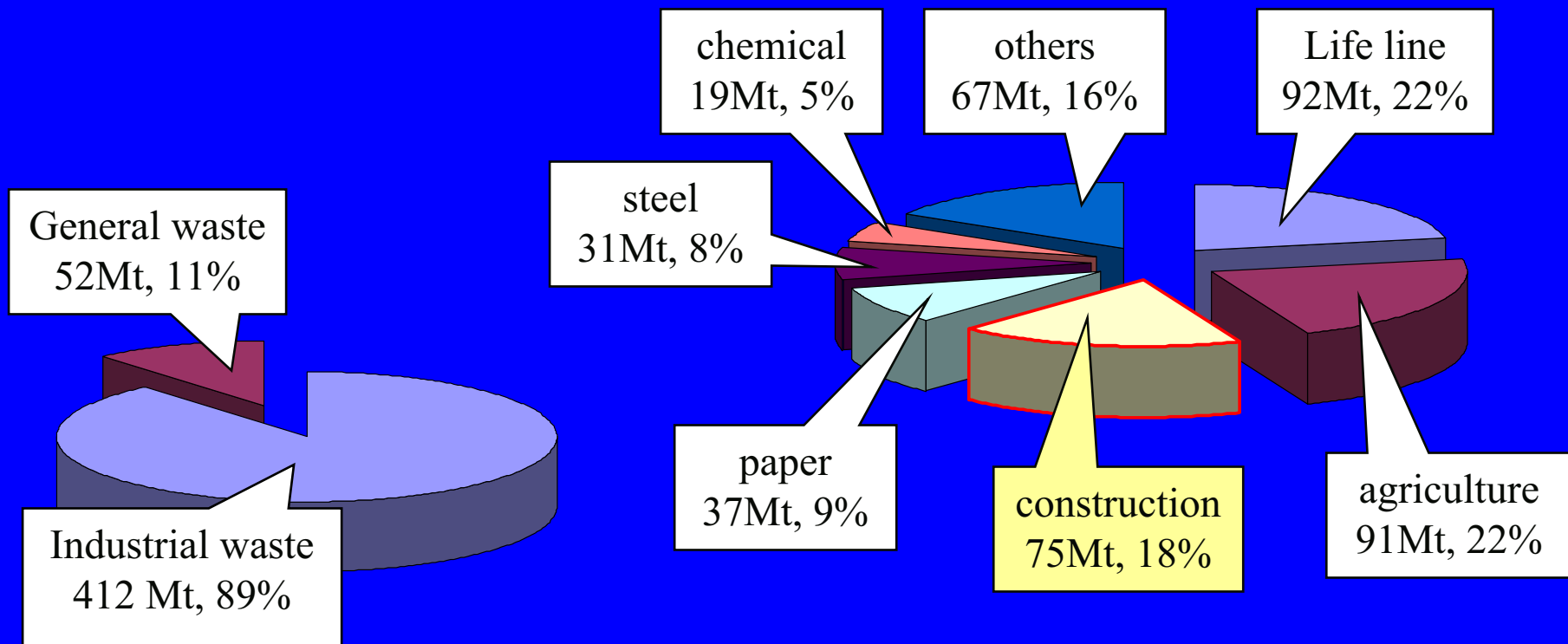
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INFORMATION CENTER
(JACIC)**

I .PRESENT SITUATION OF

CONSTRUCTION WASTE

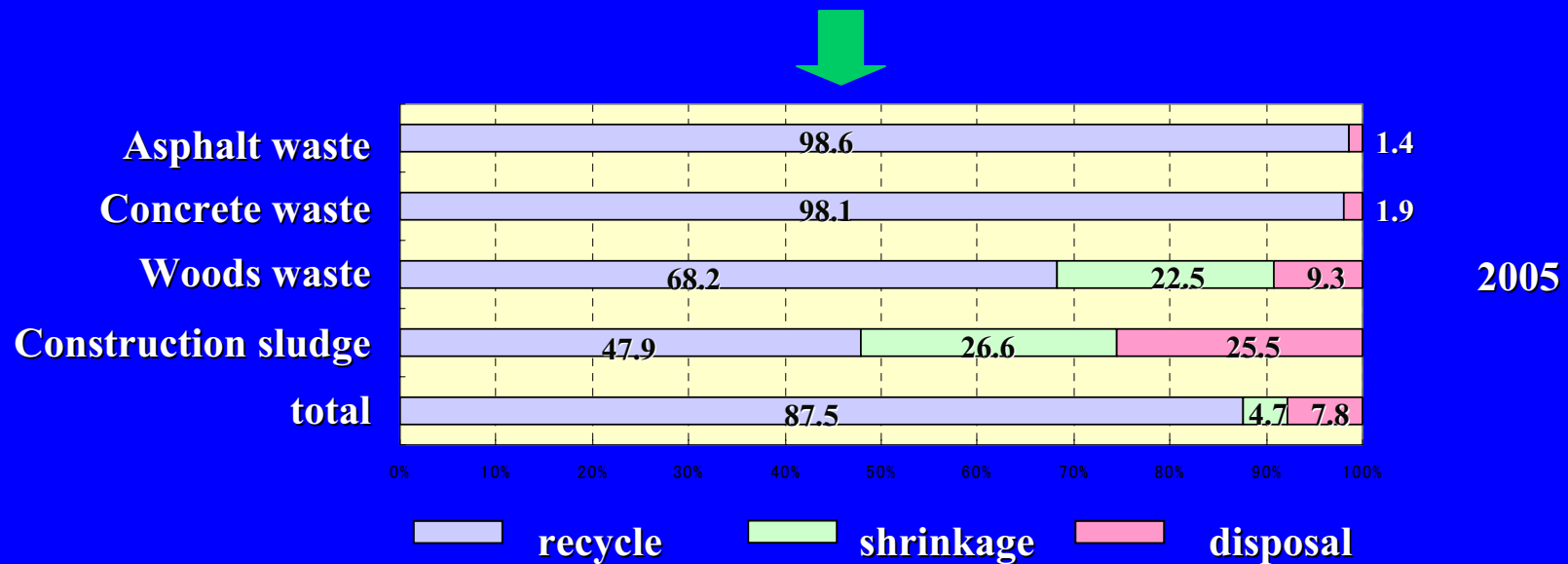
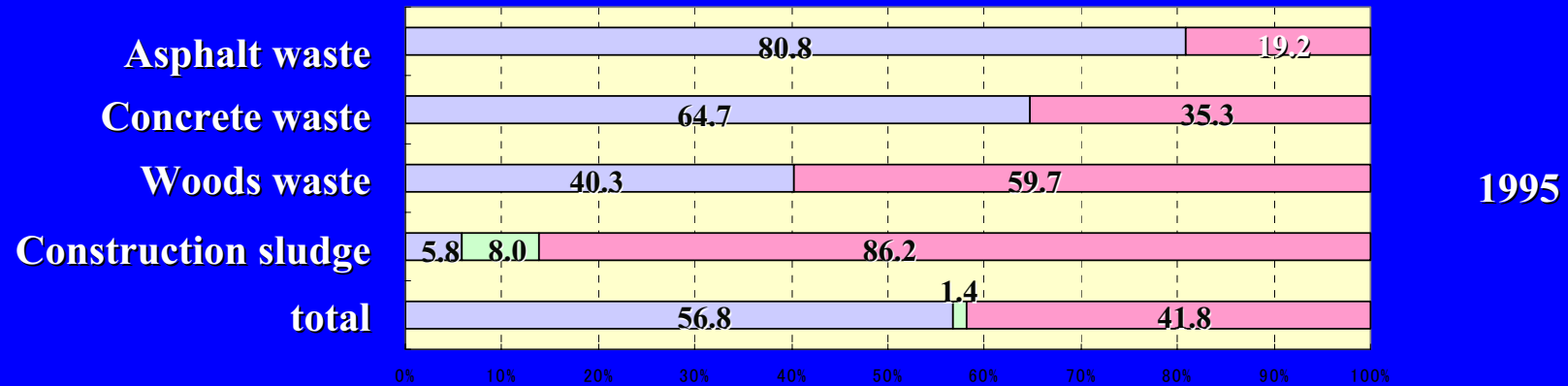
● *Quantity of Discharged Industrial Solid Waste*

- industrial waste shares 89% in whole waste
- construction waste shares 18% in industrial waste



(Ministry of Environment 2003)

● Progress of recycling construction by-products (Recycling rates)



(Ministry of Land, Infrastructure and Transport 2006)

II. Construction recycle plan 2008 by MLIT, government of JAPAN

1.OUTLINE OF PLAN

1) Recycling of concrete waste and asphalt waste is to be continued

2) Recycling of other by-products (woods waste, construction sludge, mixed construction waste, soil waste) should be promoted

3) By-products generated by construction activity should be decreased

Construction recycle plan 2008

item		as of 2005	target2010
concrete waste	recycle rate	98.6%	$\geq 98\%$
aspahlt waste		98.1%	$\geq 98\%$
woods waste		68.2%	77%
woods waste	recycle+shrink rate	90.7%	$\geq 95\%$
construction sludge		74.5%	82%
mixed construction waste	dispose volume	2.92mt	2.05mt($\Delta 30\%$)
total constructioun waste	recycle+shrink rate	92.2%	94%
soil waste	effective usage rate	80.1%	87%

*shrink = waste to be burned ,or dewatered by press

2.Recycle policy for MLIT national projects

1) concrete waste and asphalt concrete waste are to be carried to recycle facility

2)woods waste are to be carried to recycle facility in 50km.

If there is no recycle facility in 50km, woods waste can be burned to shrink.

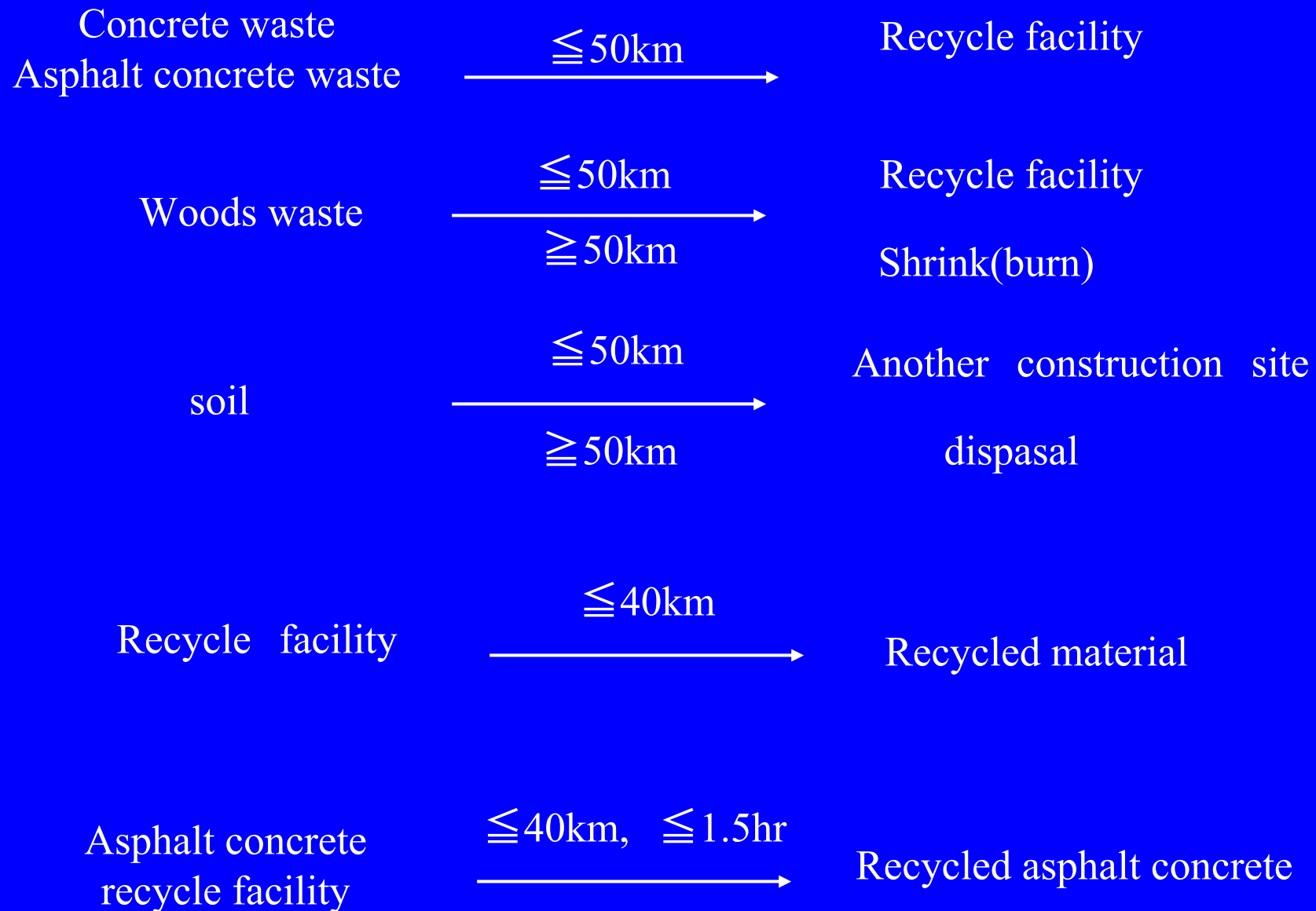
3) carry excess soil to construction site with soil demand regardless of cost, if the construction site is within 50km.

4)If there is recycle facility in 40km, use recycled material for construction use.

5)use recycled asphalt concrete, if there is asphalt concrete recycle facility in 40km and within 1.5hr carriage.

6)use construction related soil regardless of cost, if the construction site with excess soil is within 50km

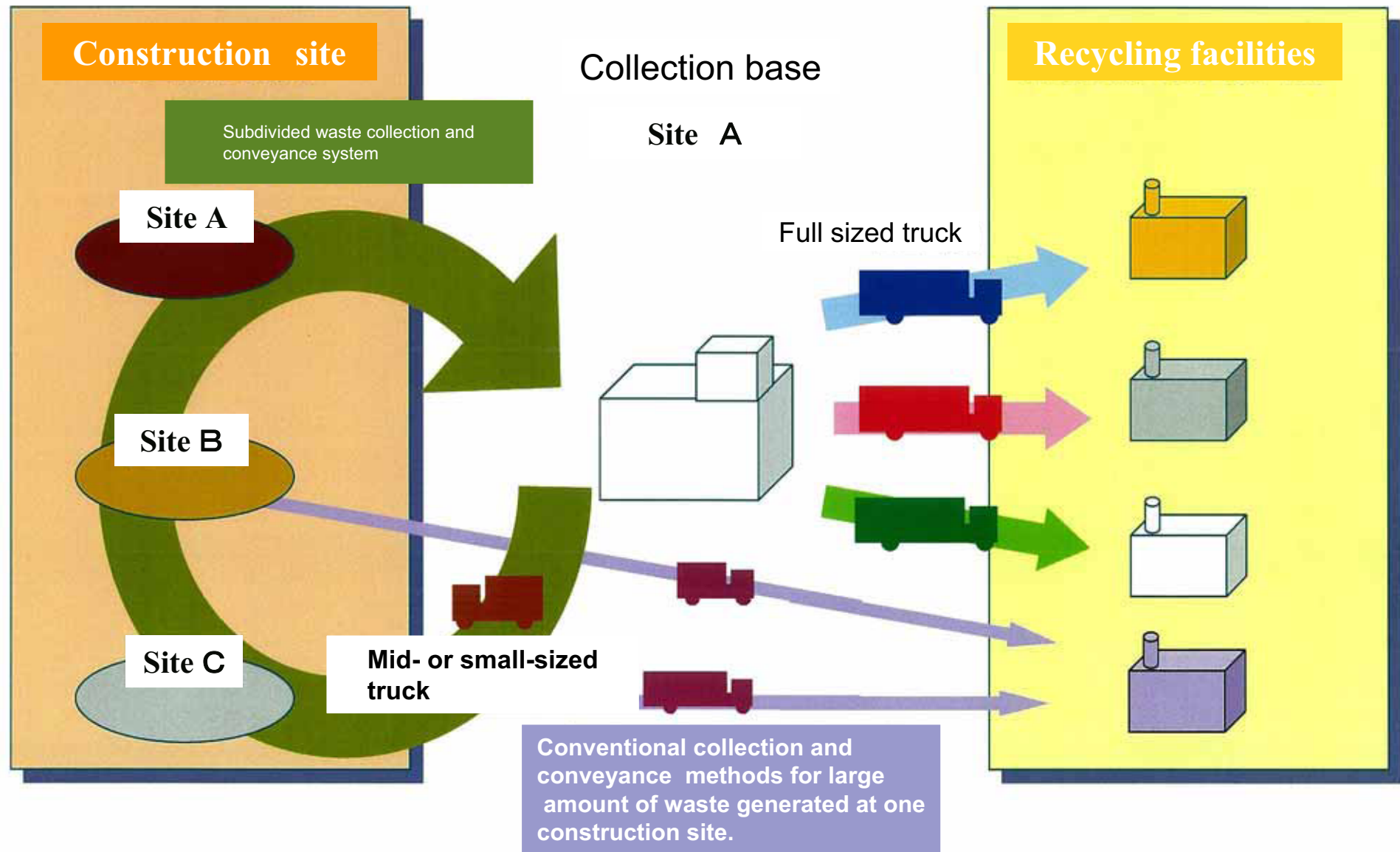
Recycle policy for MLIT national projects



3. National major projects

- 1) Longer usage of construction products by strategic maintenance with forecast**
- 2) Wooden Housing project that can be used 200 years**
- 3) Renovation of official buildings using old building body**
- 4) Prepare manual for on site separation of by-products, and quality standard for wood tip**
- 5) Making rule for usage of soil between projects including private projects**

Measure to recycle mixed construction waste



III. Construction By-products

Resource Information System

1.PURPOSE

1)construction work requires plenty of materials as concrete, soil/sand, woods metal, etc.

2)to reduce waste and to reuse as resources, exchange of materials between construction projects shall be encouraged

3)contribute to avoid environmental problem by saving materials and reduce waste

4) Construction By-products Resource Information System (COBRIS) is used to exchange information for recycle, reuse and adequate disposal

2. FUNCTION

1)register disposed by-products and usage of recycled materials by contractors

2)search for recycling facility information(item accepted, acceptance rule, acceptance capacity, fee)

3)calculate distance between construction site and recycle facility

4)search for recycled material information (items, supply ability, price)

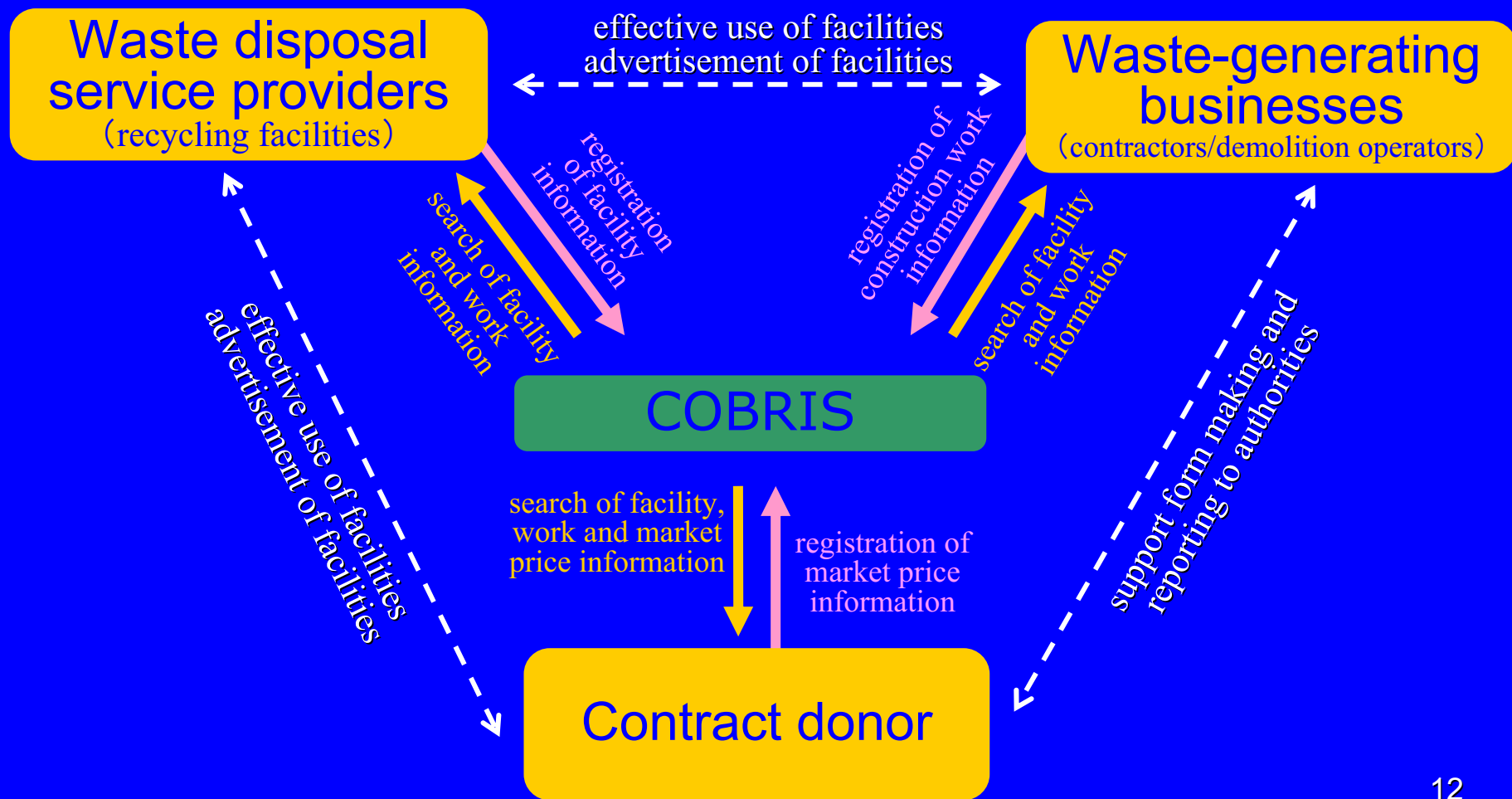
5)easy preparation of official documents for recycled material usage plan

6)on line data input for construction recycle census by MLIT

II Details of COBRIS

Construction By-products Resource Information System

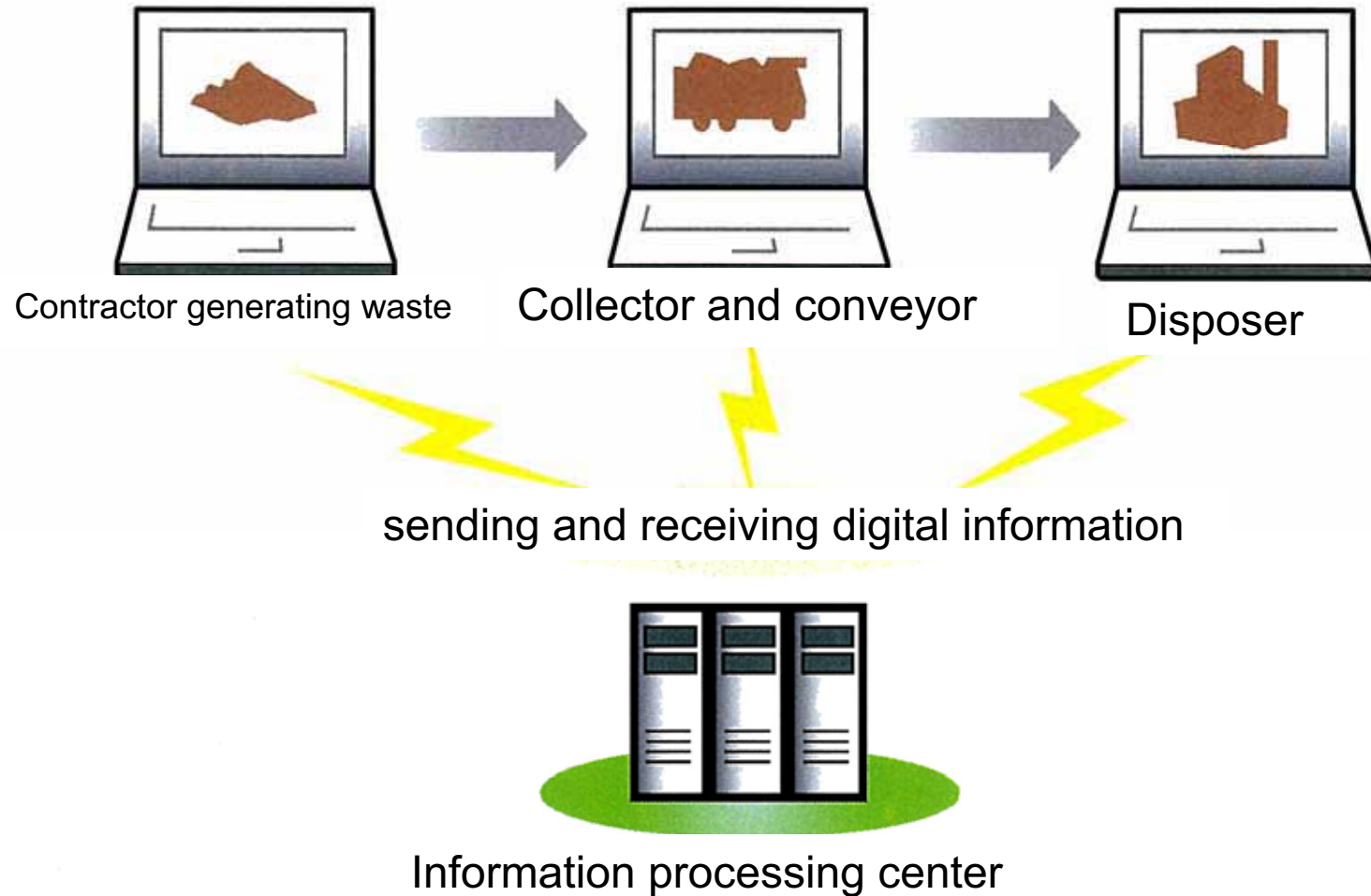
● System concept

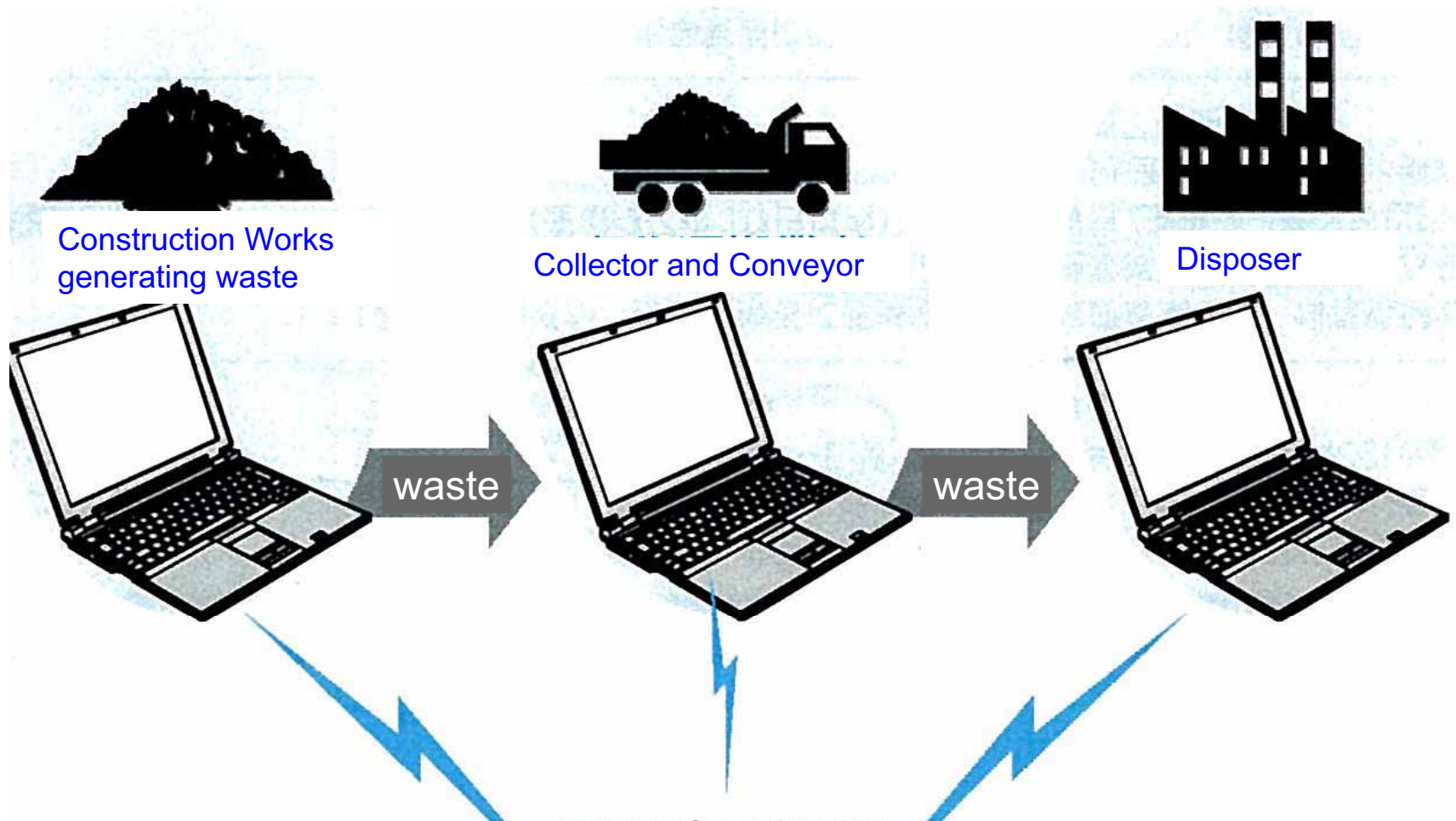


SYSTEM to trace wastes

Outline of Electric Manifest System

Contractors generating waste, collectors and conveyors, and disposers send and receive the Electric Manifest information via network of the information processing center.





Sending and receiving digital information

The Information Processing Center
 -notifies conveyance and processing completion

-alerts when the notification (such as completion notification of waste conveyance) is overdue

-stores and manages the Manifest Information



Japan Industrial Waste Technology Center as
The Information Processing Center
 designated by the Minister of Environment according to Article 13-2 of Waste Disposal and Public Cleansing Law

3. theme on construction by-products

1)making manual for on site separation of mixed by-products

2)making quality standard for wood tip for recycle use

3)by-products disposed by construction activity should be decreased

4)prepare recycled material information on quality, safety, content % of by-products, and re-recycle information

5)prepare information to regionally balance supply and demand of recycled material

6)by-products disposed of by construction activity should be decreased

7) easy calculation of CO2 discharge and environmental load

8) life cycle construction material management (disposal, intermediate treatment, re-production, usage of recycled material, final disposal)

9) supply chain management

10) cooperation between government, designers, contractors, and waste treatment companies

11) joint transportation of small amount of separated mixed by-products

IV. System to use soil between projects

1. function

1) Search candidate construction site to use soil by miles to transport soil, construction time schedule, and soil quality

2) committee to discuss on soil usage between projects among national and local governments

2. theme on soil usage

1) recycling of construction sludge

2) measure to decrease disposure of soil from construction site

3) making rule to use soil between projects including private projects

4)effective use of stockyards

5)keep quality of soil by private projects

6)forecast regional supply and demand on soils for intermediate to long period

7)easy calculation of CO2 discharge and environmental load

8)integrated usage of soils and construction sludge

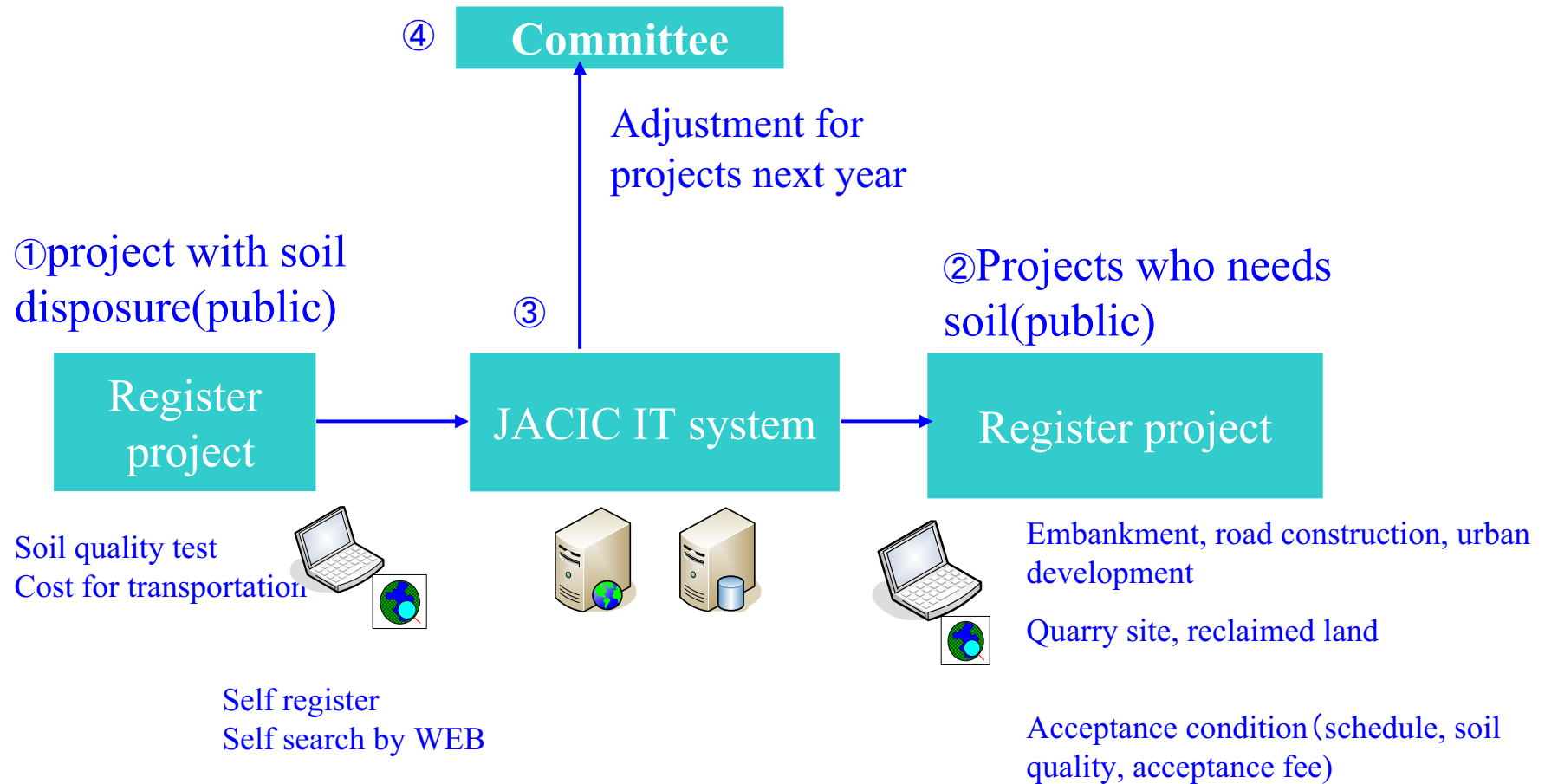
9)visual presentation of soil usage

10)further study on government recycle policy

3. theme on soil system

- combination of IT system and human interaction(committee, organization for adjustment)

system to use soil between projects



Construction Related Soil information system

registering works
receiving
construction
related soil

retrieving for
works
generating
construction
related soil

retrieving for
works receiving
construction
related soil

registering works
generating
construction
related soil

Client A

a work generating construction related soil
(soil volume, soil property,
earth work period, etc)

Client B

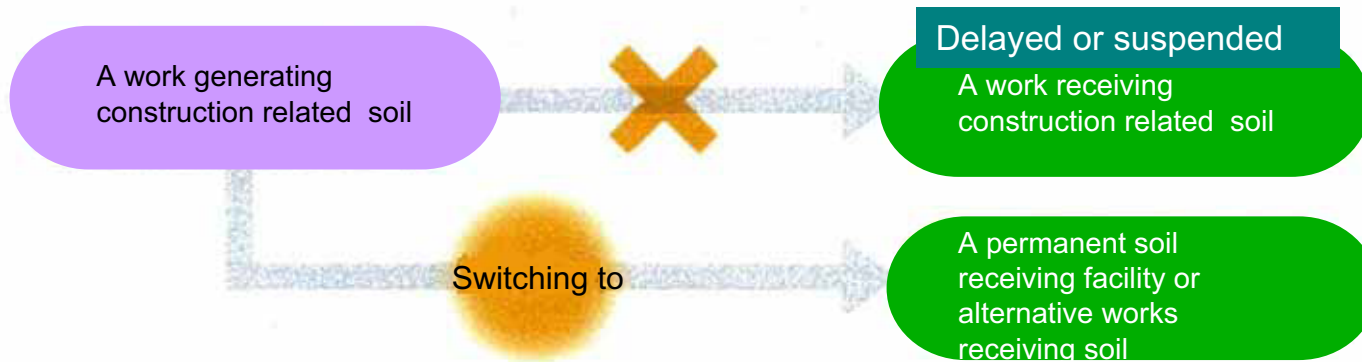
a work generating construction related soil
(soil volume, soil property,
earth work period, etc)

realize effective use of
construction related soil
between works

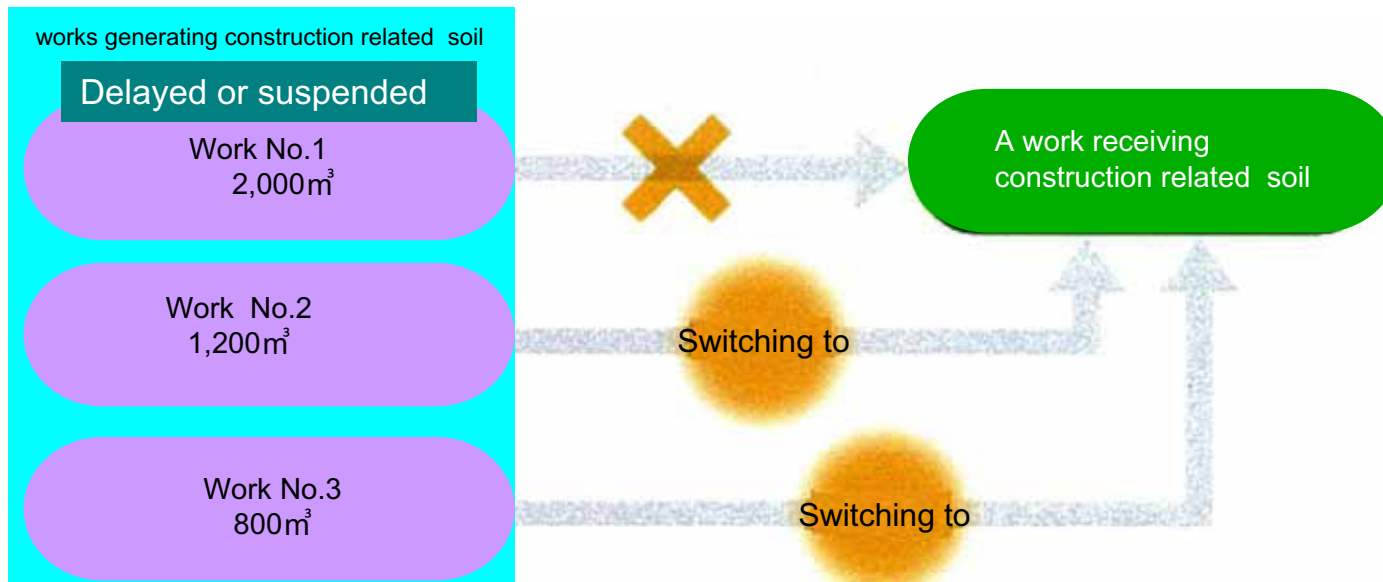
Another system to use soil between projects(by UCR)

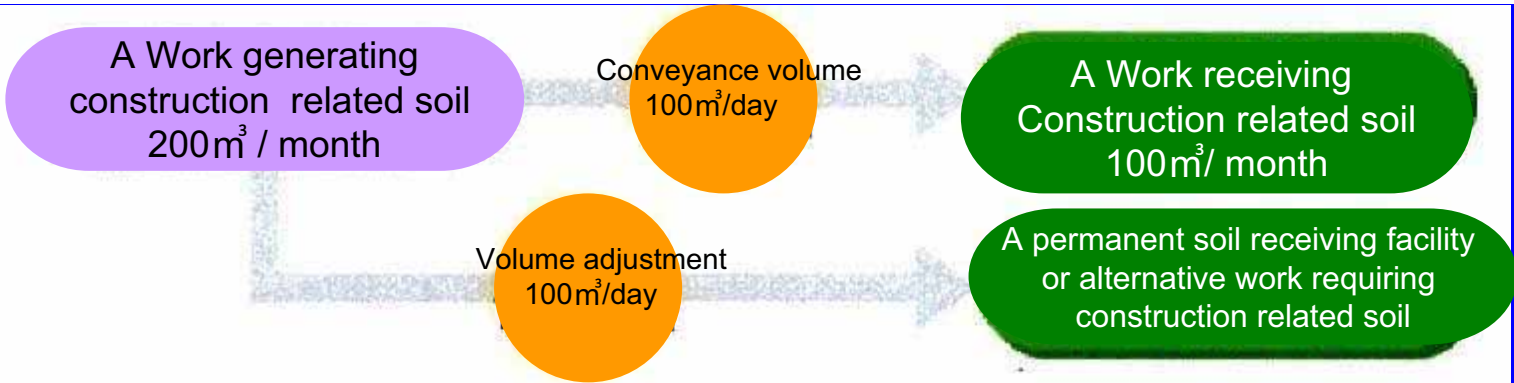


(1) In case that the originally planned construction work becomes unable to receive construction related soil because of delay or suspension, a permanent soil receiving facility or alternative construction sites will be arranged to receive their generated soil.



(2) In case that originally planned construction work generating construction related soil becomes unable to carry out generated soil because of delay or suspension, alternative construction works generating soil will be arranged for the receiver to acquire construction related soil.

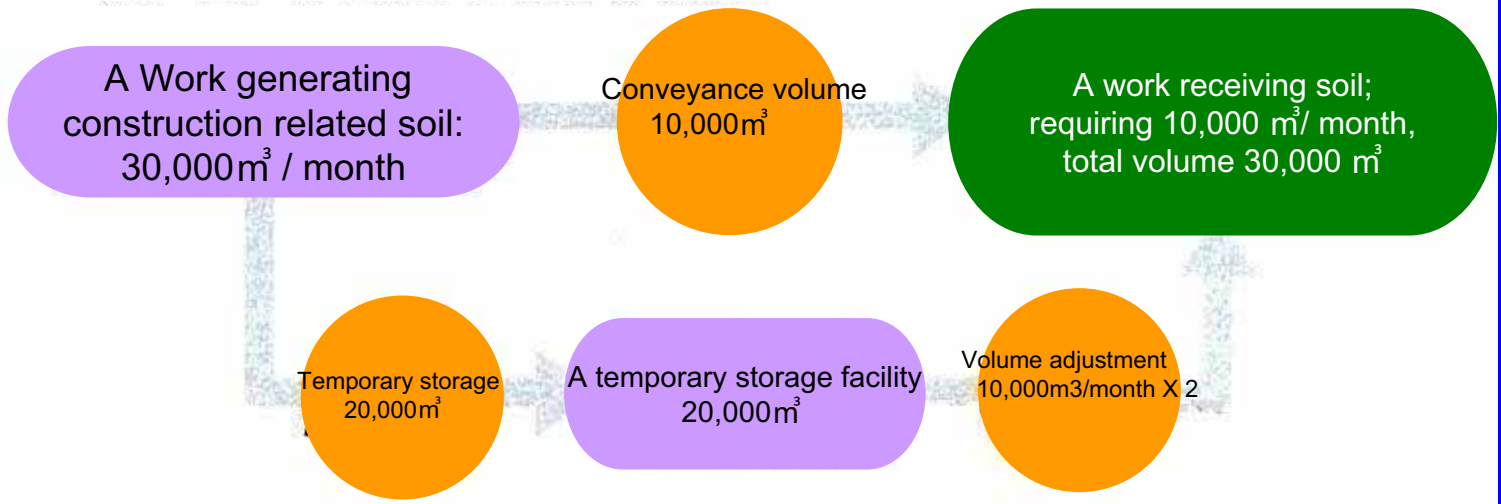




problems

- It is hard to secure permanent soil receiving facilities.
- Rationale for securing alternative soil receiving facilities will be needed

(3) Securing temporary storage facilities
 It is necessary to secure temporary storage facilities for adjusting the schedule.
 Temporary storage facilities are secured, for example, in case that smooth delivery is difficult because each work has a different schedule.



problems

- It is hard for client organizations to secure temporary facilities.
- The expenses for temporary storage facilities and additional conveyance are required to be born.