



# SCG Designing Sustainability

Concrete steps Forward

Nov 12, 2019

**100+** years of rich history with vision to be  
the leader in our business



Establishment of Cement Thai Company

A Royal Decree of King Vajiravudh  
[King Rama VI] in 1913



# SCG BUSINESS UNIT

To leverage people's quality of life by delivering quality products and services from excellent process, technology development and innovation, to be one of ASEAN's leading sustainable companies



## SCG CEMENT-BUILDING MATERIALS

Total Cement and building materials supplier and distributor, including retail business with national network



## SCG CHEMICALS

Total chemicals product manufacturer in Asia-Pacific region from upstream to downstream



## SCG PACKAGING

Large-scale total paper and packaging provider in ASEAN with world class quality products

**SCG** Vision to be **a Regional Business Leader**  
with emphasis on **Innovation**  
& **Sustainability**



# SCG Circular way

# BUSINESS TRANSFORM TO CIRCULAR ECONOMY



**Make:** Minimize resource consumption through product design and innovation.

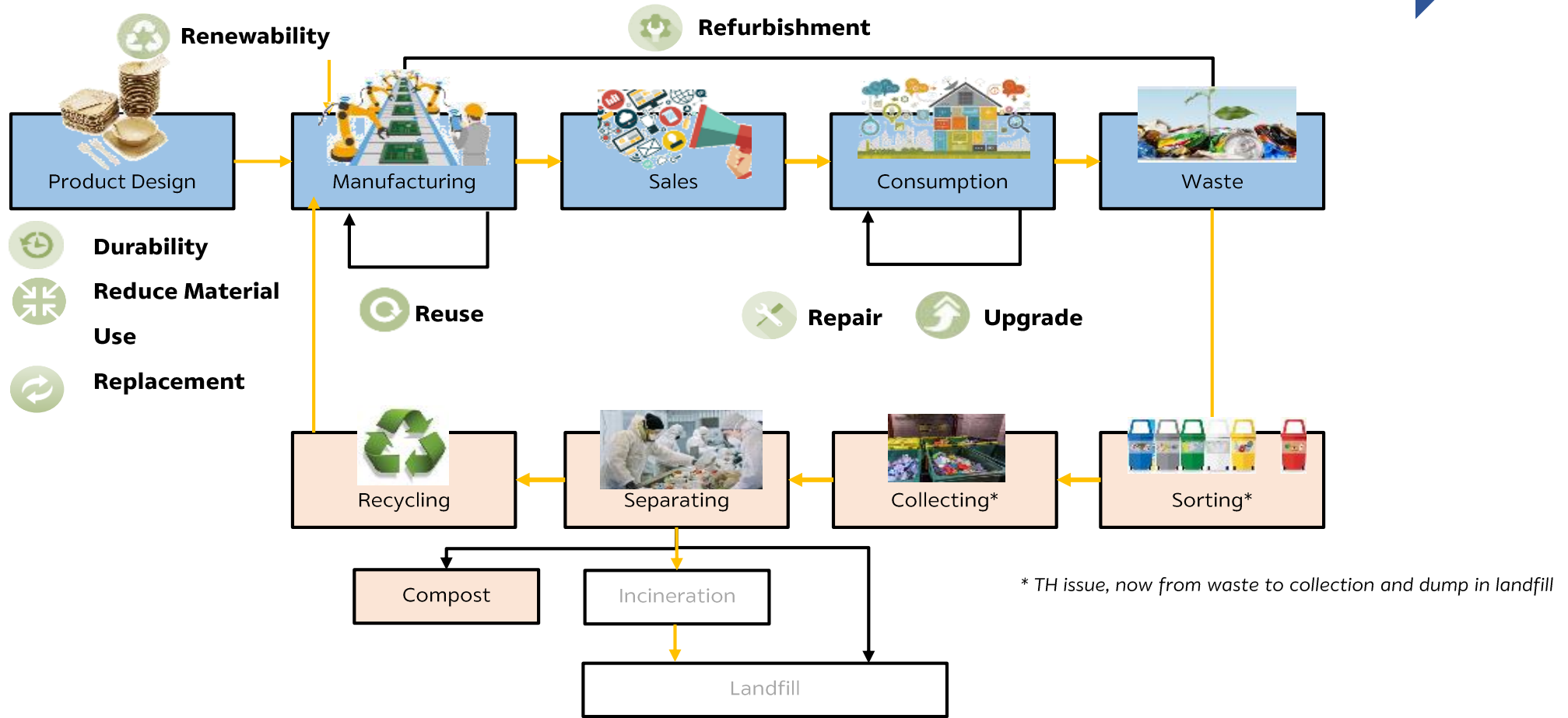
**Use:** Maximize the value of products and dispose of them correctly to allow for easy recovery.

**Return:** Reuse materials for production or other purposes to maximize their useful life.

# THE GOAL IS TO RETAIN VALUE AS MUCH AS POSSIBLE

## 2. Circular Products & Services Development

## CREATE & MAINTAIN MATERIAL VALUES

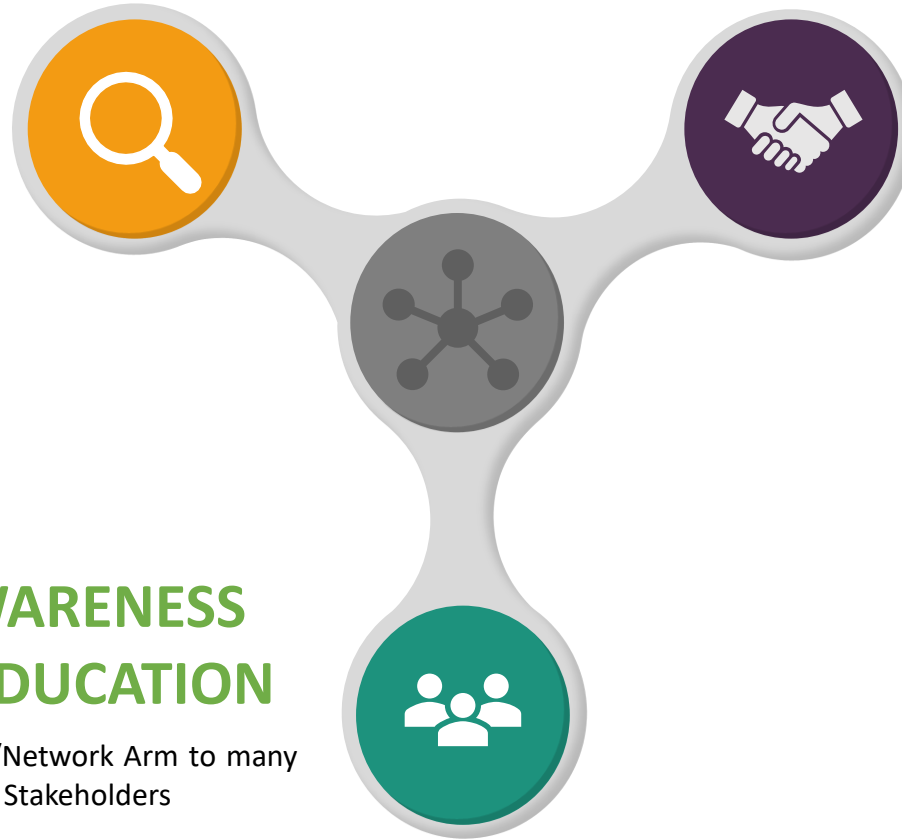


## 1. Waste Management & Supplies

## COLLECT & RE-CREATE CIRCULAR SUPPLY

## PRODUCT & CIRCULAR BUSINESS MODELS

Product & Services Solutions under Circular theme in connection with all 5 circular business models (Circular Supply, Product Life Extension, Sharing Platform, Product as a Service, Resource Recovery)



## PARTNERSHIPS & COLLABORATIONS

Building collaboration to co-create values & Connecting Network of stakeholders in Circular Economy

## AWARENESS & EDUCATION

Connection/Network Arm to many industries & Stakeholders



**SCG**

# **Product Solutions & Circular Business Models**



# PACKAGING BUSINESS CIRCULAR ECONOMY VALUE CHAIN

**Less Paper but same Performance**

**MAKE**

**Design**

- Paper Packaging Products**
- **Reduce Material Use:** Light-weight Paper Green Carton, Micro Flute
  - **Recycled Input:** Paper Grocery Bag recycled from corrugated container

**Other Products**

- **Recyclable Products:** Paper Pouch (FybroZeal), Paper Straw, Pulp Mold Food Packaging, Mono Material with Multilayer Laminated Flexible Packaging (R-1)

**Manufacturing**

**Circular Process**

- **Renewable energy:** Biogas, Solar



**USE**

**Sell**

- **Product as a Service:** Display Solution for Booth and Exhibition
- **Logistics:** Backhaul used packaging from Retail Store to Distribution Center, Backhaul paper trim from Packaging Manufacturing to Paper Manufacturing

**Use**

- **Reuse:** Educate consumer to change their behavior
- **Product Life-Extension:** Recyclable Furniture and

**Digital Waste Trade & Collection Services**

**PAPER X**  
THE VALUE OF YOUR WASTE

WE MAKE WASTE PAPER RECYCLE EASY AND ACCESSIBLE

Digital platform for collecting waste paper

**REQUEST**

Request Paper X to pick up

**COLLECT**

Collect paper at your place

**REDEEM**

Earn coins, Redeem rewards

**RETURN**

**Collect**

- **Waste Management:**
  - Sorting
  - Separating
  - Collecting / Logistic & Transportation
  - Collaboration Model with business partner



**Waste Collection & Transfer Services**



# CEMENT BUILDING MATERIALS CIRCULAR ECONOMY VALUE CHAIN

## Return

### Demolition waste recovery

- Construction waste crushing plant
- Recycled aggregate
- Recycled concrete
- Upcycling product
- Return to manufacturer



Rental Equipment for Construction

## Use

### Circular living



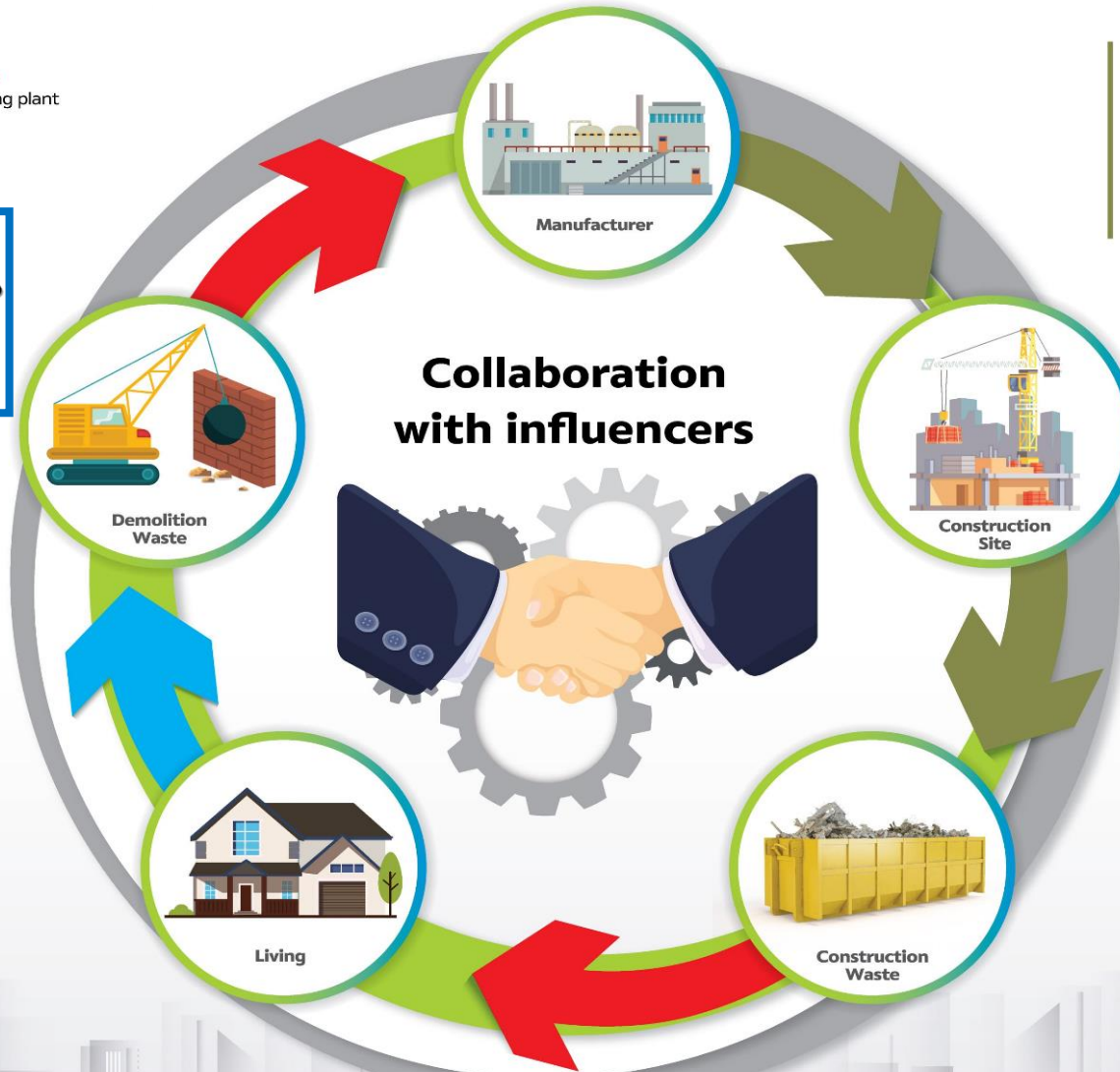
Solar energy



Well AIR



Active AIRflow™ System



## Make

### Circular design :

- **Circular products**  
(Recycled material, Long life & Modular, Prefabrication)
- **Circular services & solutions**  
(Cut to size, BIM business, Reuse)
- **Co - design**  
(Lean waste at the beginning)



Recycled Material

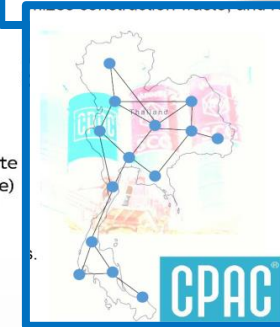


Modular

### Circular construction :

- Waste management at site  
(Separate, Collect, Recycle)
- Machine rental (AIIRENT)
- Backhaul Logistic

Download BIM objects for SCG products and other brands for further use at no costs at [www.BIMNONE.com](http://www.BIMNONE.com)



## Return

### Construction waste recovery

- Construction waste crushing plant
- Recycled aggregate
- Recycled concrete
- Upcycling product
- Return to manufacturer



Recycled Concrete Road

**BIM Solutions  
Less wastes  
& Improve  
Efficiency  
In Construction**

# CHEMICALS BUSINESS CIRCULAR ECONOMY VALUE CHAIN

## RETURN

### Waste Sorting and Collecting :

- Online waste management application - Koomkah
- Platform to match clean waste with

### KoomKah

DIGITAL PLATFORM FOR SUSTAINABLE WASTE MANAGEMENT

**FUNCTIONS**

KoomKah is a digital platform developed to promote correct waste sorting in order to improve recycling efficiency right from the beginning. The platform offers waste collectors and waste banks more convenience, as waste types, amounts, and prices can be easily recorded and organized via KoomKah mobile application.

KoomKah also serves as an additional digital channel where users can directly sell each type of waste to specific recyclers and incinerators.

KoomKah is not only allows sorted waste to be sold at good prices but also delivers quality waste to recyclers and enables waste banks to storage and plan waste purchase and logistic more efficiently.



## MAKE

### Product Design :

- Durability Product : High Strength Material (PE-112)
- Renewability – Bio Plastic
- Replacement – Post Consumer Recycled Resin
- Reduce Material use - SMX™ Technology

### Manufacturing :

- Maintain material value
- Yield maximization
- Alternative Energy
- Recycled Water



### Reduced material use

Thinner and lighter weight material with high strength for food & beverage and consumer packaging



### Renewability/ Recycle

Higher percentage of recycled plastic resin blending while maintaining product property



Recycled plastic resin for consumer packaging shopping bag

## USE

### Raising Consumer's Awareness

- Reduce
- Reuse
- Repair

### Change mindset and behavior

#ใช้ให้คุ้ม #แยกให้เป็น #ทิ้งให้ถูก

**Durability**

High strength material for multiple usage industrial packaging

**Reuse**

Industrial Bulk Container

Chemical drum container

**Recycle**

Recyclable mono-material packaging with high oxygen barrier to replace Aluminum layer

**Replacement**

**SCG**

# **Collaboration & Awareness**

# Global Collaboration

International

Circular Metrics & Plastic Indexes

Ocean-River Innovative Collaboration

Global Plastic Alliances Collaboration

- UNOSSC Symposium, WBCSD Circularity Metrics, PDP



- Ocean & River Clean up Potential Innovative Collaborations



- Global Plastic Alliances Effort & Solutions - 4 Strategic Direction



# SD SYMPOSIUM 10 YEARS with UNOSSC



## SD SYMPOSIUM BANGKOK 10 YEARS SD Symposium 10 Years (August 26, 2019) "Circular Economy: Collaboration for Action"

1,214 Participants | 45 Partnership Network | More than 20 Countries



# ALLIANCE TO END PLASTIC WASTE

*A new CEO led, cross-sector, not-for-profit organization with a clear mission to develop, accelerate & deploy solutions, catalyze public & private investment and engage communities to help end plastic waste in the environment*

**Investing \$1.5B USD over 5 years**

*Not for Profit 501(c)(3) status supports global operations, eligibility for foundation grants and potential tax benefits*

## FOUR PART STRATEGY



Infrastructure Development to collect and manage plastic waste, and increase recycling in areas of greatest need.

Innovation to advance and bring to scale new technologies that make recycling and recovering plastics easier and create value from all post-use plastics.

Education and Engagement of governments, businesses, and communities to mobilize action.

Clean Up to help stop plastic waste at its source, focusing on cities and major rivers that carry significant amounts of plastic waste to the ocean.



**A New Cross-Value Chain Synergy to Remove Plastic Wastes from the Environment**  
**August 27, 2019**  
**Great Room, 3fl. W-Hotel BANGKOK**



Officers	Lyondellbasell	P&G	VEOLIA
Executive Committee	BASF	Berry	Dow
	Mitsubishi Chemical Holdings	PEPSICO	Chevron Phillips
Board of Directors	Shell	SUEZ	TOMRA
	Braskem	CLARIANT	covestro
	Formosa Plastics*	GEMINI	GRUPO PHOENIX
	NOVA Chemicals	OxyChem.	PolyOne.
	SINOPEC	SKC	STOROPACK
		SUMITOMO CHEMICAL	NOVOLEX
			Westlake Chemical



# Collaboration with UNEP

## (1) PDP (PLASTIC DISCLOSURE PROJECT) with UNEP & Ocean Recovery Alliances



STATUS: Screening potential scopes for PDP & Training

## (2) SHARING FACTSHEET OF SCG ACTIVITIES ON SUSTAINABILITY & MARINE LITTER SOLUTIONS

# National Collaboration & Awareness

## National & Others

Public-Private-Partnership- PLASTIC

Circular Economy Communities

Marine Litter DMCR Collaborations

B2B Partnerships

### • PPP-Plastic Collaboration: Improve Infrastructure, Policy, Innovation, Awareness

INFRASTRUCTURE & MOTIVATION MODELS

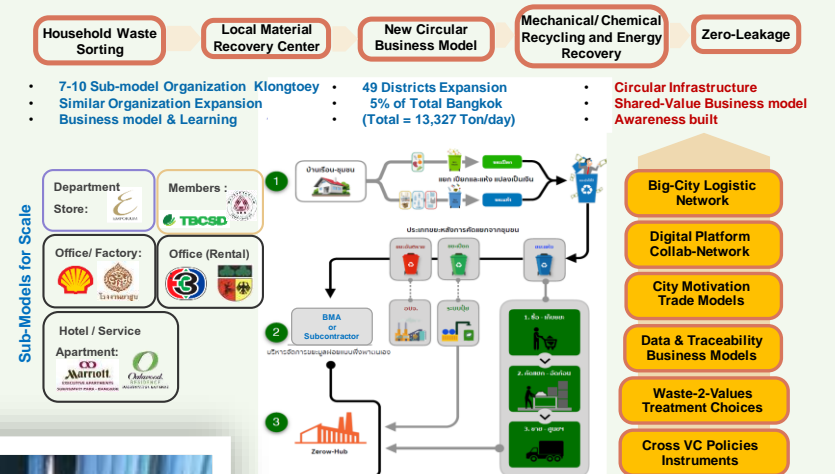
**MEGA city: Bangkok-Klongtoei & Rayong Models** Waste management System

### • Circular Economy Communities & Business Models & Awareness

INFRASTRUCTURE & MOTIVATION – Waste Management System **Rangplub Model – Digital waste Bank** (Sorted Materials at Origin / Logistic Models/ Awareness Building)



### Circular Economy Business Model : Bangkok Model



# National Collaboration & Awareness

## National & Others

Public-Private-Partnership- PLASTIC

Circular Economy Communities

Marine Litter DMCR Collaborations

B2B Partnerships

- **Support National Leader on Marine Litter: DMCR**  
"Little Trap" Garbage Boom Design & Others



- **B2B Circular Collaborations (eg. Plastic Road, Circular Products, Upcycling)**

SCASSET



Bangchak Lube Gallon

- Collaboration to innovate service solutions apart from product development
- Formulate used lube gallon PCR into virgin material



Reduce usage by -XX%



# RECYCLED ROAD



The reapplication of plastic and cement wastes for a useful purpose according to Circular Economy concept or the circulation of the resources in the value chain in order to use the less new resources and to get the most out of them in 3 pillars-Make, Use and Return.

## RECYCLED PLASTIC ROAD

From Used Plastic to Innovative Recycled Plastic Roads

Collaboratively developed by SCG and Dow Thailand, the recycled plastic road is an innovation that draws inspiration from the notion of circular economy and sets out to raise public awareness of the importance of plastic waste management. In the construction of recycled plastic roads, used plastics are ground into small pieces and incorporated into asphalt. This not only adds value to discarded plastics but also gives asphalt enhanced properties.

### Benefits of the Recycled Plastic Road

#### Durability

The recycled plastic road is more resistant to water erosion and has longer lifespan.

#### Eco-Friendliness

The invention reduces waste and emissions of greenhouse gases by asphalt production.



#### Better Quality of Life

The innovation promotes waste sorting sustainably.

### Types of Plastics Suitable for Road Construction

Plastic bags with handles, plastic bags designed for hot foods, straws, coffee cups (PP, PE, PET), packages with no metal layer, such as dish soap pouches.

### Steps in Constructing Recycled Plastic Roads



\*The Plastic Road Asphalt has 10-20% Greater Strength.

Aggregate

Plastic Waste

Asphalt Cement

## Recycled Concrete Aggregates For Road

Concrete aggregates are construction wastes not usually being considered for recycling as natural and raw materials in Thailand are quite economical but if we do not change today...they will be all gone in the future. The roads using recycled concrete aggregate for subbase, base and concrete layers were constructed by the cooperation between SCG and developers, Supalai Public Company Limited and MQDC, in applying 30% recycled aggregates for concrete layers and 100% recycled aggregate for base and subbase which recycled from concrete slabs and pile heads as replacements of natural materials to construct the concrete roads in their residential projects.



### Durability

The recycled plastic road is more resistant to water erosion and has longer lifespan.



### Eco-Friendliness

The invention reduces waste and emissions of greenhouse gases by asphalt production.



### Better Quality of Life

The innovation promotes waste sorting sustainably.

### Value to customer

100% recycled concrete aggregates and with equal strength.

### Value to the world

100-ton natural resources (stone and sand) reduced for a 150-sqm land.



# SCG Circular way

Community



Family



Myself





***PASSION FOR BETTER***