Current Situation of Recycled Concrete Aggregate in Thailand

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According to Manowong and Brockman (2015), the construction industry in Thailand generates approximately 1.1 million tonnes of waste, and more than half of this waste is concrete. Most of the waste is disposed of in landfills or used to fill in areas to be developed, which often causes many problems later. This waste is expected to increase as the construction industry grows. Data from the Economic Intelligent Center of Siam Commercial Bank (2021) reported that the construction sector might expand by 8% after the Covid-19 period ends. This problem is receiving considerable attention from both the public and private sectors in Thailand.

In the past few years, there has been impressive progress in academia toward solving this problem. The Department of Public Works and Town and Country Planning (DPT), in cooperation with Ramkhamhaeng University (RU), signed a Memorandum of Understanding (MoU) with Saezone Inc. from Japan in the areas of education, research, training, seminars, and job visits (Fig.1). This cooperation includes developing specialized training courses for exchanging information about the education system, advancing research support, and organizing a project to establish a plant to manufacture concrete from recycled aggregate. The goal is to use more aggregates in Thailand's construction industry.

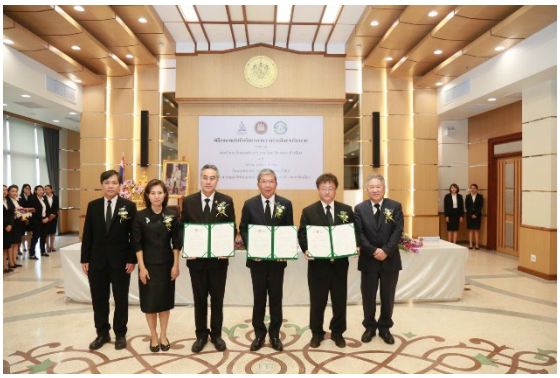

Fig. 1 Memorandum of Understanding signed by DPT, RU, and Saezone Inc.

Frasers Property Limited and the Siam Cement Group also are collaborating to develop construction according to the Circular Economy philosophy by recycling concrete scraps from the pile heads in the One Bangkok project (Fig. 2) as aggregates. At 430 meters in height, this project will be the 10^{th} tallest building in ASEAN (Realist, 2019). The recycled aggregate from the pile heads will be used in wall pieces and walkways for this project.

In 2017, construction waste processing infrastructure was developed. As a result, Bangkok Metropolitan has set up a full-scale construction waste processing plant with a capacity of 500 tons per day (Fig. 3) in the On Nut district in eastern Bangkok. This will encourage projects in the neighborhood to bring construction waste to the plant for processing (MGR Online, 2017).

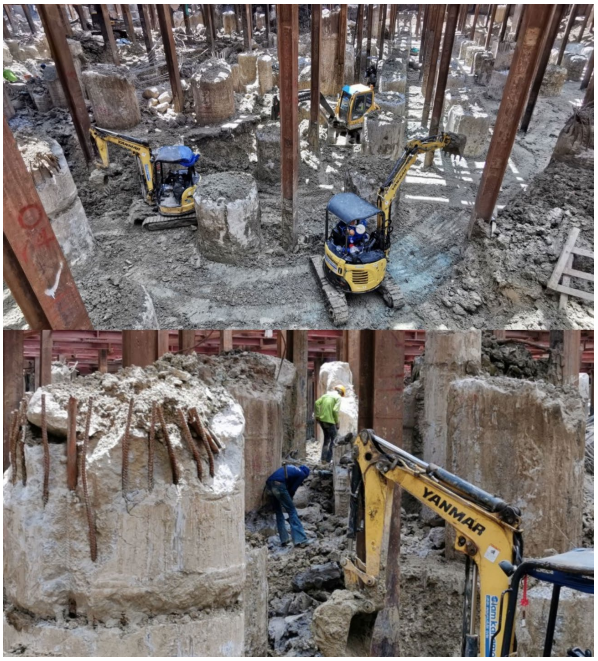

Fig. 2 Cutting pile heads in the One Bangkok Project. The pile heads will be recycled as aggregate.

Thailand is actively addressing the problem of construction waste and promoting concrete recycling. Although the impact of the projects described above might not produce changes quickly, if this level of progress can be maintained and the various domestic and international construction sectors—both public and private—continue to cooperate, then the problem of

construction waste in Thailand will be solved soon.

Fig. 3 On Nut Concrete Waste Recycling Plant

Reference:

Manowong, E., &Brockmann, C., 2015. Construction waste management in newly industrialized countries. Retrieved from https://www.irbnet.de/daten/iconda/CIB_DC24555.pdf

efinance Thai (Online). EIC Expected 8% growth from construction industry (in Thai). Available From: https://www.efinancethai.com/LastestNews/LatestNewsMain.aspx?ref=A&id=SG5LL29Kak5Id1E9&security=SCB. Access Date: 18 March 2022.

Realist (Online). One Bangkok: the Most Luxurious City in Bangkok (in Thai). Available From: https://bit.ly/3tk65fs Access Date: 18 March 2022.

MGR Online. Bangkok allows contractors to dispose of construction waste at On Nut Center for free. Available From: https://mgronline.com/uptodate/detail/9580000127439. Access Date: 18 March 2022.