



HISER

International Conference

21, 22 & 23 June 2017

TU Delft



**Local Organizing
Committee**

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PROGRAM

HISER International Conference Delft

21, 22 & 23 June 2017



Science Centre (Building 3 on the map attached)

Mijnbouwstraat 120

2628 RX Delft, The Netherlands



This event is organized in collaboration with the H2020 project BAMB - Building as Material Banks.





www.citg.tudelft.nl/hiser

HISER International Conference on **Advances in Recycling and Management of Construction & Demolition Waste** **21, 22, & 23 June 2017 Delft, The Netherlands**

Dear Author, Exhibitor, Engineer and Student,

Currently 461 million tons per year of (ever more) complex construction and demolition waste (C&DW) are generated within the European Union. The average recycling rate is around 46%. Therefore there is still a significant loss of potential valuable minerals, metals and organic materials all over Europe. Several initiatives are ongoing worldwide to develop methodologies and technologies to turn this waste streams into resources for the benefit of the economy and the environment.

Among them, the European funded HISER project (www.hiserproject.eu) which aims to develop and demonstrate novel cost-effective technological and non-technological holistic solutions for a higher recovery of raw materials from ever more complex C&DW, by considering circular economy approaches throughout the building value chain (from the End-of-Life Buildings to new Buildings).

With great pleasure we present you the program for HISER conference 2017 Delft. With interesting presentations, keynote lectures and special events we are convinced that the conference will bring research and practice together and efforts to solve demands of modern society.

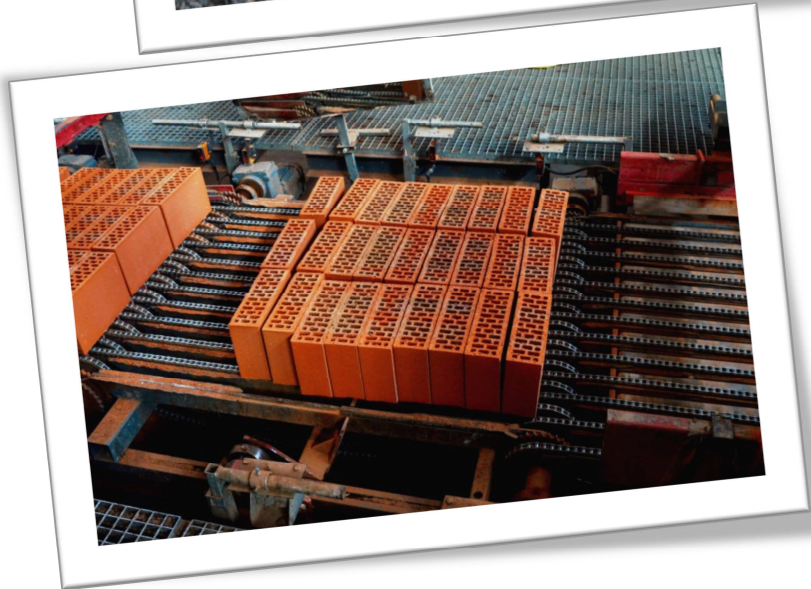
More information on the conference is given in the attached flyer and on the website www.citg.tudelft.nl/hiser

With kind regards,

On behalf of the Organizing and Scientific Committee

Dr. Francesco DiMaio





Keynote Speakers:



Wednesday 21 June
Prof.dr. C.S. Poon
Hong Kong Polytechnic University



Wednesday 21 June
Bob Geldermans
AMS INSTITUTE



Thursday 22 June
Prof.dr. P.C. (Peter) Rem
Delft University of Technology



Thursday 22 June
Prof.dr. Jianzhuang Xiao
Tongji University

Technical Tours:



Thursday 22 June
Visit STRUKTON/GBN Recycling
Site in Roosendaal



Friday 23 June
Visit C2CA Technology
(Strukton | GBN site in Hoorn)

HISER International Conference 2017

Conference Program

		A	B
Wednesday June 21	8:00 8:45	REGISTRATION AND REFRESHMENTS	
	8:45 9:00	WELCOME and OPENING	
	9:00 10:00	PLENARY PRESENTATIONS	
	10:00 11:00	PARALLEL SESSIONS	PARALLEL SESSIONS
	11:00 11:30	Coffee Break	
	11:30 12:45	PARALLEL SESSIONS	PARALLEL SESSIONS
	12:45 14:00	Lunch	
	14:00 15:45	PARALLEL SESSIONS	PARALLEL SESSIONS
	15:45 16:00	Coffee Break	
	16:00 18:00	PARALLEL SESSIONS	PARALLEL SESSIONS
	19:00	Dinner	
Thursday June 22	9:00 10:00	PLENARY PRESENTATIONS	
	10:00 11:30	PARALLEL SESSIONS	PARALLEL SESSIONS
	11:30 12:00	Coffee Break	
	12:00 13:45	PARALLEL SESSIONS	PARALLEL SESSIONS
	13:45 14:45	Lunch	
	15:00 20:00	TECHNICAL TOUR to the STRUKTON/GBN Recycling Site in Roosendaal	
Friday June 23	9:00	TECHNICAL TOUR: Visit C2CA Technology (Strukton GBN site in Hoorn)	
	11:30	C2CA Technology Industrial Demonstration	
	13:00	Lunch	
	14:00	END. Return to Delft	
	15:30	Discussion	



Parallel Sessions:

HISER CONFERENCE

DAY 1: Wednesday, June 21, 2017

Time		A	B
Wednesday, June 21, 10:00 - 12:45 Parallel Sessions	10:00 - 10:15	VII. Model uncertainty of recycled aggregate concrete beams subjected to bending J. Pacheco, J. de Brito, C. Chastre, L. Evangelista University of Lisbon	I. Microwave-Induced Interfacial Failure to Enable Debonding of Composite Materials Steffen Lieberynzeit, habil. Anette Müller, Barbara Leydolph, Ulrich Palzer Weimar Institute of Applied Construction Research
	10:15 - 10:30	VII. Lightweight gypsum mortar with construction waste to be used as coatings with improved superficial hardness Mercedes del Río Merino, Paola Villoria Sáez, Jaime Santa Cruz Astorqui, Antonio Rodríguez Technical University of Madrid	I. Semi-selective demolition: current demolition practices in Flanders Jef Bergmans, Philippe Dierckx, Sofie De Regel, Annelies Vanden Eynde, Philippe Van de Velde, VITO
	10:30 - 10:45	VII. Influence of the saturation state of recycled sand on mortars compressive strength Yacoub A., Djerbi Tegguer A., Fen-chong T. IFSTTAR	I. Deconstruction, preparation for reuse and reuse of salvaged materials on a pilot construction site in Brussels Romnée A., Billiet L., Mahieu O., Vrijders J. Belgian Building Research Institute (BBRI)
	10:45 - 11:00	VII. Properties of concrete blocks made with recycled concrete aggregates: from block wastes to new blocks Zengfeng Zhao, Luc Courard, Frédéric Michel, Sébastien Remond, Denis Damidot University of Liège	IV. The potential of graph theories to assess buildings' disassembly and components' reuse: How building information modelling (BIM) and social network analysis (SNA) metrics might help Design for Disassembly (DfD)? F. Denis, N. De Temmerman, Y. Rammer Vrije Universiteit Brussel
	11:30 - 11:45	VII. Using Recycle Concrete Aggregate Coating Agent for Improving Concrete Microstructure and Hardened Characteristics Lapyote Prasittisopin, Phattarakamon Chaiyapoom, Chawis Thongyothee, Chalermwut Siam Research and Innovation company	V. BIM for pre-demolition and refurbishment inventories and waste information management David García, Xavier Plazaola, Iñigo Vegas, Pedro Areizaga Fundacion TECNALIA research and innovation
	11:45 - 12:00	VII. Recycled Aggregate in civil works and building construction C. Medina, I.F. Sáez del Bosque, A. Matias, B. Cantero, P. Plaza, P. Velardo, E. Asensio, University of Extremadura	IX. Traceability: a tool for the valorization of secondary materials in the Flemish region Liesbet Van Cauwenberghe, Annelies Vanden Eynde Grondbank vzw
	12:00 - 12:15	VII. Use of concrete recycled aggregates as a raw material in lightweight mortar fabrication González Cortina, Mariano, Saiz Martínez, P Fdez. Martínez, F Viñas Arrebola, C Universidad Politecnica de Madrid	IX. Putting recycled concrete into practice in Belgium: From case studies over chain management to standards and quality assurance Jeroen Vrijders, Bram Doods, Petra Van Itterbeeck Belgian Building Research Institute (BBRI)
	12:15 - 12:30	VII. Performance of C&DW materials for road applications validated by field monitoring J. Neves, A. C. Freire, A. J. Roque, I. M. Martins and M. L. Antunes Laboratório Nacional de Engenharia Civil –LNEC	IX. Waste audit –securing good quality raw material from construction and demolition waste Wahlström, M., Hradil, P., Arevalillo A. VTT
	12:30 - 12:45	VII. Study of reuse from recycled aggregate processing M.I. Sánchez de Rojas, E. Asensio, M. Frías, C. Medina Eduardo Torroja - CSIC	X. Impact of Green Public procurement on the market of recycled concrete Frédéric Bougrain Centre Scientifique et Technique du Bâtiment

HISER CONFERENCE

DAY 1: Wednesday, June 21, 2017

Time		A	B
Wednesday, June 21, 14:00 - 15:45 Parallel Sessions	14:00 - 14:15	II. Sorting of Mineral Construction and Demolition Wastes by Near-Infrared Technology Elske Linß, Andrea Karrasch, Mirko Landmann Bauhaus-Universität Weimar	VIII. Systemic view on Reuse Potential of building elements, components and systems - Comprehensive Framework for assessing Reuse Potential of Building Elements Elma Durmisevic, Pieter R. Beurskens University of Twente
	14:15 - 14:30	II. Sorting of Construction and Demolition Waste by Hyperspectral-Imaging Frank Hollstein, Markus Wohlebe, Martin Herling Iñigo Cacho and Sixto Arnaiz RTT Steinert GmbH	VIII. Assessing potential financial and environmental benefits of a newly developed waste traceability system in Flanders Wim Debacker, Sofie De Regel, Annelies Vanden Evnde VITO
	14:30 - 14:45	II. Separation in air jigs of mixed construction and demolition waste W. M. A. Ambrós, C. H. Sampaio, B. G. Cazacliu, G. L. Miltzarek, L. R. Miranda Federal University of Rio Grande do Sul	VIII. Challenging the current approach to end of life of buildings using a life cycle assessment (LCA) approach Flavie Lowres BRE
	14:45 - 15:00	II. CO2 uptake by fine fractions of CDW D. Gastaldi, F. Canonico Buzzi Unicem	VIII. Environmental impact of concrete with recycled aggregates an evaluation through 4 case studies Jeroen Vrijders and Lisa Wastiels BBRI
	15:00 - 15:15	II. How Los Angeles test could be better adapted to the recycled concrete aggregate B. Cazacliu, R. Artoni, E. Hamard, A. Cothenet IFSTTAR	VIII. Bottom-up policy support: using a construction materials model to identify and quick scan circular opportunities Elisabeth Keijzer, Jacco Verstraeten-Jochensen TNO
	15:15 - 15:30	II. The Manufacture of Lightweight Aggregates from Recycled Masonry Rubble Anette Mueller, Steffen Liebezeit, Barbara Levdoiph, Ulrich Palzer Institut für Angewandte Bauforschung Weimar	VIII. Assessing potential financial and environmental benefits of Brick-to-Brick manufacturing Wim Debacker, Sofie De Regel, Omar Amara, Wai Chung Lam, Jef Berghmans VITO
	15:30 - 15:45	II. Development of an innovative process for the up-cycling of concrete Waste Kathy Bru, Solène Touzé, Daniel B. Parvaz BRGM	VIII. Life Cycle Assessment and Life Cycle Costing for Demolition Waste Management M ingming Hu, Valentina Prado-Lopez, Brenda Miranda-Xicotencatl, Diana Ita-Nagy, S. Lotfi, Leiden University

HISER CONFERENCE

DAY 1: Wednesday, June 21, 2017

Time		A	B
Wednesday, June 21, 16:00 - 18:00 Parallel Sessions	16:00 - 16:15	<p>II. Concrete mixing monitoring by image analysis applied to Recycled Aggregate Concrete.</p> <p>J. Moreno-Juez, R. Artoni, B. Cazacliu, E. Khoury. IFSTTAR</p>	<p>VIII. Design Support for Revisable Buildings with focus on visualizing and simulating transformation capacity during initial design phase</p> <p>Elma Durmisevic, Marc C. Berg, Ussama Atteya University of Twente</p>
	16:15 - 16:30	<p>II. Indexing and Sorting Robot Based on Hyperspectral and Reflectance Information</p> <p>Tommaso Zerbi, Roberto Landò, Raffaele Vinai, Konstantinos Griqoriadis, Marios Soutso STAM Srl</p>	<p>VIII. Building with a positive ecological footprint Development and evaluation of a Cradle to Cradle[®]-inspired energy-plus house</p> <p>Salfner S., Lang W. Hochschule Ansbach</p>
	16:30 - 16:45	<p>II. Mixing Recycled Aggregates Concrete – old methods for new concrete</p> <p>B. Cazacliu, J. Moreno-Juez, L.J. Zhao IFSTTAR</p>	<p>VIII. How do current policies support a transition towards a circular economy in the built environment?</p> <p>C. Henrotay, Molly Steinlage, D. W. Debacker Brussels Environment</p>
	16:45 - 17:00	<p>II. Characterization of filler fraction from the production of recycled sand from CDW</p> <p>Isabel Martins, Carina Ulsen, Henrique Kahn, Mirko Landmann, Anette Mueller LNEC</p>	<p>VIII. GtoG - from gypsum to gypsum - a circular economy for the gypsum industry with the demolition and recycling industries</p> <p>Christine Marlet Eurogypsum</p>
	17:00 - 17:15	<p>II. Differences between Laboratory and In-Situ Conditions Leading to Bad Estimation of the Water Absorption Capacity of Recycled Concrete Aggregates</p> <p>E. Khoury, B. Cazacliu, S. Remond IFSTTAR</p>	<p>XI. Influence of Institutional Arrangements on On-site Recycling and Reuse Practices of C&D Waste</p> <p>V. G. Ram , Satyanarayana Kalidindi, Harish Krishna Nanduru Indian Institute of Technology Madras (IITM)</p>
	17:15 - 17:30	<p>VI. Novel circular economy business model of high-added value products for energy efficiency: from C&DW to aerogels</p> <p>F. Ruiz-González, D. Nadargi, K. Philippe, E. Goiti, M. Ocejo, I. Vegas Keey Aerogel SAS</p>	<p>XI. Innovative waste management practices on construction sites in Brussels: lessons learned from pilots</p> <p>Romnée A., Vrijders J. Belgian Building Research Institute</p>
	17:30 - 17:45	<p>VI. The French National Project Recybéton, to bring the concrete world into circular economy</p> <p>F. de Larrard, H. Colina LafargeHolcim</p>	<p>XI. Construction and Demolition Waste Management in India</p> <p>Soumen Maity, Pankaj Phulwari, Vaibhav Rathi, Krishna Chandran, Achu Sekhar, Avinash Kumar Qutab Institutional Area</p>
	17:45 - 18:00	<p>II. Numerical modelling of the dehydration of waste concrete fines: An attempt to close the recycling loop</p> <p>Abraham Teklay, Ali Vahdi, Someyah Lotfi, Francesco Di Mio, Peter Rem TU DELFT</p>	<p>VIII. Influence of materials composition and transportation tours on life cycle assessment of recycled aggregate concrete</p> <p>Sandrine Braymand, A délaïde Feraille, Nicolas serres, Françoise Feuegas ICube, Strasbourg Univ.</p>

HISER CONFERENCE

DAY 2: Thursday, June 22, 2017

Time		A	B
Thursday, June 22, 10:00 - 11:30 Parallel Sessions	10:00 - 10:15	XI. Developments in the Production and Use of Recycled Demolition Aggregate in the North West of England During the Last 15 Years. Marios Soutsos Queen's University Belfast	III. Construction and demolition waste as a resource for sustainable, very low-energy buildings Ivana Banjad Pečur, Marina Bagarić, Bojan Milovanović, Ivana Carević University of Zagreb
	10:15 - 10:30	XI. Environmental policy support for pre-demolition audits in Luxembourg Christina Ehlert, Arno P. Biwer, and Enrico Benetto Luxembourg Institute of Science and Technology	III. Toward a complete reemployment on site of recycled aggregates stemming from demolition work S.Alexanian, F. Hubert, F. Buyle-Bodin Lille 1 University
	10:30 - 10:45	XI. Material Flows of the German Building Sector Matthias A. Heinrich Technical University of Munich	III. Extending buildings' life cycle: sustainability early design support tool Joana B. Andrade and Luís Bragança University of Minho
	10:45 - 11:00	XI. Business models for building material circularity: learnings from frontrunner cases K. Wang, S. Vanassche, A Ribeiro, M. Peters, J. Oseyran VITO	III. Reuse of building products and materials – barriers and opportunities Gilli Hobbs, Katherine Adams BRE
	11:00 - 11:15	XI. Comparative case study of the Construction and Demolition Waste practical treatment induced by different legislations in France and Belgium Mignon B. and Bréquel H. Centre Terre et Pierre (CTP)	III. Circular Economy and Design for Change within the Built Environment: preparing the transition Wim Debacker, Saskia Manshoven, Martijn Peters, Andre Ribeiro, Yves De Weerd VITO
	11:15 - 11:30	XI. Successful steel reuse in the UK – key aspects why it happened Michał P. Drewniok, Cyrille F. Dunant, Julian M. Allwood, Jonathan M. Cullen University of Cambridge	III. The role of the client to enable circular economy in the building sector Katherine Tebbatt Adams, Mohamed Osmani, Tony Thorpe, Gilli Hobbs Loughborough University

HISER CONFERENCE

DAY 2: Thursday, June 22, 2017

Time		A	B
Thursday, June 22, 12:00 - 13:45 Parallel Sessions	12:00 - 12:15	XI. Up-cycling today's building stock: the case study of Paris region Augiseau V. and Barles S. Université Paris	III. The use of renewable materials in reversible building design: a literature study Mieke Vandenbroucke VIBE
	12:15 - 12:30	XI. Characterizing the generation and flows of construction and demolition waste in China Lina Zheng, Huabo Duan, Gang Liu University of Southern Denmark	VI. It is possible to economically upcycle recycled aggregates Lauredan Le Guen, Ferro G., Cazacliu B. IFSTTAR
	12:30 - 12:45	VIII. Sustainability Assessment Method for Healthcare Buildings – Criteria for Materials Selection in the Portuguese Context Maria F. Castro, Ricardo Mateus, Luís Bragança University of Minho	VI. Circular construction and demolition waste? Barriers and opportunities for creating circular business models in the EU C&DW sector Dawid Krysiński ASM - Market Research and Analysis Centre
	12:45 - 13:00	II. Building Waste – Construction materials from your waste Eunan Kelly, Lauren McMaster CDE Global	VI. European Circular Construction Alliance - adopting Circular Economy for internationalization and global competitiveness of European SMEs in Building and Construction Gumilar Vladimir, Dana Przemyslaw sEaNERGIA Baltic Cluster
	13:00 - 13:15	II. Production of low porosity recycled sand from construction and demolition waste Carina Ulsen, Henrique Kahn, Juliana L. Antoniassi, Isabel Martins University of Sao Paulo	VI. Reuse of building components: an economic analysis Frédéric Bougrain, Sylvain Laurenceau CSTB
	13:15 - 13:30	XI. A survey on the construction and demolition waste in Mongolia Tommaso Troiani, Somayeh Lotfi TU DELFT	III. Multi-criteria study for recycled concrete aggregate separation process Sandrine Braymand, Adélaïde Feraille, Nicolas serres, Françoise Feugeas ICube, Strasbourg Univ.
	13:30 - 13:45	III. Closing the loop of EOL concrete Somayeh Lotfi, Peter Rem, Francesco Di Maio, Abraham Teklay, Mingming Hu, Eric van Roekel TU DELFT	VII. Feasibility of surface sampling in automated inspection of concrete aggregates during bulk transport on a conveyor M.C.M. Bakker TU DELFT

General information:

The HISER conference is a 3 day meeting dedicated to the topics of:

Category	Topics
I	Smart Dismantling and Demolition Methods and Tools
II	Innovative Technological Solutions for Recycling and Recovery of High Quality Building Materials from C&DW
III	Enabling Circular Product Design and Facilitating the Reuse of Building Materials
IV	Deconstruction, Transformable and Reversible Building Design
V	Building Information Modeling - BIM
VI	Development of Circular Economy Business Models
VII	Performance and Durability of Recycled Building Materials
VIII	Environmental assessment, Life Cycle Analysis, Risks and Health Safety of C&DW Materials
IX	Standards and Regulations for Quality Control of Recycled Building Materials from C&DW
X	Standards and Regulation for Reverse Logistics and Circular Value Chain in Buildings
XI	Case studies

The aim of the conference is to develop and demonstrate novel cost-effective technological and non-technological holistic solutions for a higher recovery of raw materials from ever more complex C&DW, by considering circular economy approaches throughout the building value chain (from the End-of-Life Buildings to new Buildings).

Furthermore, the proposed conference intends to provide researchers and industry experts with the opportunity to exchange their ideas and showcases in advanced/innovative technologies and methodologies to process and valorize C&DW in the context of circular economy.

Registration fee

Online registration is possible via the conference website. On the conference website, there is also a link to a hotel reservation website. The registration fee includes the participation to the conference sessions, the coffee, tea, beverages, the conference dinner and a copy of the proceedings.

Presentations

For the presentations computers (with Power-point, PDF viewer and Movie-players) and beamers will be available. Please bring your presentation with you when you register for the conference on Monday-morning. We will then upload your presentation to the computers and make sure it will be available at your session.

Conference web-site
www.citg.tudelft.nl/hiser

Visiting address:
Science Centre
Mijnbouwstraat 120
2628 RX Delft, The Netherlands

Free WIFI available:
SSID: **HISER17**
Wpa2 key: **tudelft2017**



Science Centre Mijnbouwstraat 120, Delft

Mekel Hall



Accessibility of the TU Campus by Public Transport

Delft can be reached by direct trains from Schiphol airport. The TU Campus can be reached from Delft Station with the district lines 69, 121 or 129. For more information see also: <http://www.9292ov.nl/> (in Dutch).

Accessibility of the TU Campus by car

The TU Campus is easily accessible by car via the A13, exit Delft/Pijnacker and exit Delft Zuid/TU-wijk.

Map and how to reach us

A map of the TU Campus is attached to this booklet and a map of the city of Delft will be included in the conference bag. Building 3 is the Science Centre building, host of the conference. To reach the Science Centre by walking from the city centre takes about 15 minutes.

HISER- International Conference 2017

Conference contact person:

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www.me.citg.tudelft.nl/events



Summer in Delft

There is no other place where you will encounter so many globally appealing cultural-historical values as in Delft – Delftware, Johannes Vermeer, Jan Steen, the link with the Dutch royal family and the Dutch East India Company. But Delft is more than history; Delft is a lively modern city with many innovations. Even if you know Delft, we are sure that you will be pleasantly surprised during your visit to Delft! It is not only the location of Delft University of Technology, but also to a vast number of museums, art galleries, restaurants and cafés, not to mention the many lovely shops!

Restaurant

Van Der Dussen Restaurant: Bagijnhof 118 | 2611 AS, 2611 AS Delft



Markt square

The central market of Delft is one of the largest market squares in Europe, 50×120 yards, and bounded on the short ends by the Nieuwe Kerk (New Church) and the Stadhuis (City hall).



On the long axes, stores and restaurants with outdoor dining occupy most of the buildings. The square is on one of the highest points in the city and dates to the late 13th C. Market on Thursday.

Nieuwe Kerk

This famous church, with the second tallest steeple in The Netherlands at 375 ft, is consecrated to St. Ursula, and faces the City Hall across the market square.



By legend, the concept arose from the vision of a Delft beggar Symon in January 1351 who saw an image of golden church with Mary seated on a throne. A wooden church was erected on the site in 1381.

Delft Blue Ceramics

It is true! When visiting Delft you may not leave without visiting a shop, a boutique, a school or a museum full of Delft Blue. Most tourists do visit the Stedelijk Museum at Prinsenhof.



Prinsenhof

It is within these walls that the man of whom much has been writ and said once trod. William of Orange, also known in these parts as William the Silent, led the resistance against Spanish rule in the Netherlands.



The well laid out museum gives and insight into the times and William's role in the rebellion.

Canals

The townhouses lining the Oude Canal remain true to principle of historic appearances, but most appear to have gutted and reconstructed interiors. Many exteriors have renovations as well, most apparent in the modern windows.



Many house businesses with scattered cute restaurants and the occasional hotel.





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