1ANCHESTER PUMP HOT GREYWATER COLD GREYWATER BLACKWATER PAVEMENT AT ALL LOCATIONS CENTRAL FACILITY MANCHESTE DISTRICT C-TRAIN STATION LRT LINE ■ ■ ■ STREETCAR LINES • • ELECTRIC BUSES ROUTES ELECTRIC BUSES ROUTES WATER NETWORK WATER STORAGE GLENMORE TRAIL TANKS BELOW GROUND DISTRICT HEATING & POWER + CIRCULATION NETWORK WATER NETWORK The new Manchester district model aims to create a nexus of infrastructure networks, including; energy, water, and transportation systems. Water and energy systems will be linked by allowing wastewater residues to be transformed into fuel, which will in turn produce heat and electricity for the district. The electricity produced from the central facility will be used to power an intricate network of public transportation that will ensure the entire district is well connected within itself and the rest of the city. The public transportation network will be supported by public bicycles and a large pedestrian network that will make it easy for residents and visitors to walk everywhere. The new urban design for 4,189,626 m3 71.3 MW DISTRICT HEATING & the district will be based on a mix of uses that will include, residential, commercial, light industrial and institutional uses. This high density, mixed-use model will revitalize the streets of the district, drawing WATER NETWORK many visitors to the area. By creating vibrant mix of uses the district will be able to provide a diversity of residences for over 50,000 people, THERMAL ENERGY REQUIRED WATER FROM BOW RIVER while also providing over 20,000 jobs within a variety of sectors. The CENTRAL FACILITY FLOOR PLAN district will also offer a extensive range of entertainment options. POWER REQUIRED WATER FROM PRECIPITATION These factors combined will attract a wide variety of demographics to the district which will result in a revitalization of that area of the city as a whole. RESIDENTIAL BREAKDOWN MIXED USE BUILDINGS TOTAL AREA = 4,034,129 M2 11 1 sta + 1 stat + 11 AREA- 2,259,114 M2 AREA/PERSON- 40M2 NUMBER OF RESIDENTS-56,477 STREET SECTIONS JOBS BREAKDOWN AREA- 968,190 M2 NET AREA- 677,733 M2 10% OFFICE 15% RETAIL AREA PER PERSON- 67.773M2/ 12 M2 AREA PER PERSON- 101.660M2/ 19 M2 OFFICE JOBS - 5.647 RETAIL JOBS - 5.350 10% CULTURAL AREA PER PERSON- 67.773M2/ 36 M2 CULTURAL JOBS - 1,882 AREA PER PERSON- 101,660M2/ 70 M2 ENTRETAINMENT JOBS - 1,452 10% SUPERSTORES AREA PER PERSON- 67.773M2/ 90M2 SUPERSTORE JOBS - 753 25% LIGHT INDUSTRIAL AREA PER PERSON- 169.433M2/ 47M2 LIGHT INDUSTRIAL JOBS - 3.604 15% FOOD INDUSTRY AREA PER PERSON- 101,660M2/ 18 M2 FOOD INDUSTRY JOBS - 5,647 STREETCAR • • • • • • • • ELECTRIC BUS • • • • • • • • 1740 m² → 24 Homes/year PV panel arrays PUBLIC BICYCLE 542000 $m^2 \longrightarrow 7500 \text{ Homes/year}$ STATION COMMERCIAL INSTITUTIONAL LIGHT INDUSTRIAL RESIDENTIAL RECREATIONAL COMMUNITY ORGANIC WASTE: FOOD, SEWAGE, CONSTRUCTION, GARDENS WASTE GARDENS ... 444, OVERALL CONCEPT AXONOMETRIC BUILDING PROGRAM STRUCTURE OVERALL CONCEPT SECTION URBAN SECTION CHP PLANT + WATER TREATMENT FACILITY SOLAR THERMAL COMMUNITY GARDENS