Land farm

Biopile

Phytoremediation

FUNCTIONALITY OF ARCTIC PLANTS

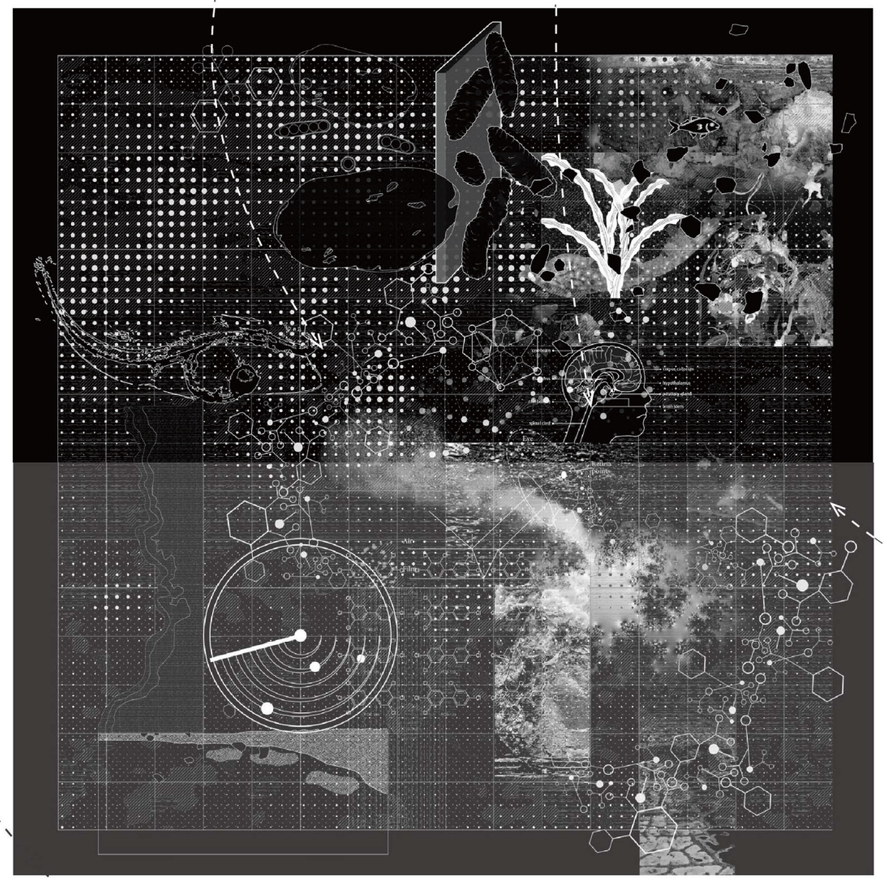
REMEDIATE AND REGENERATE THE SITE

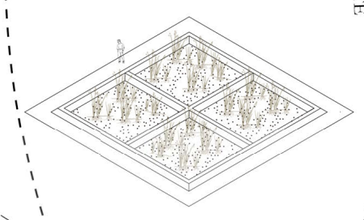
Dust control

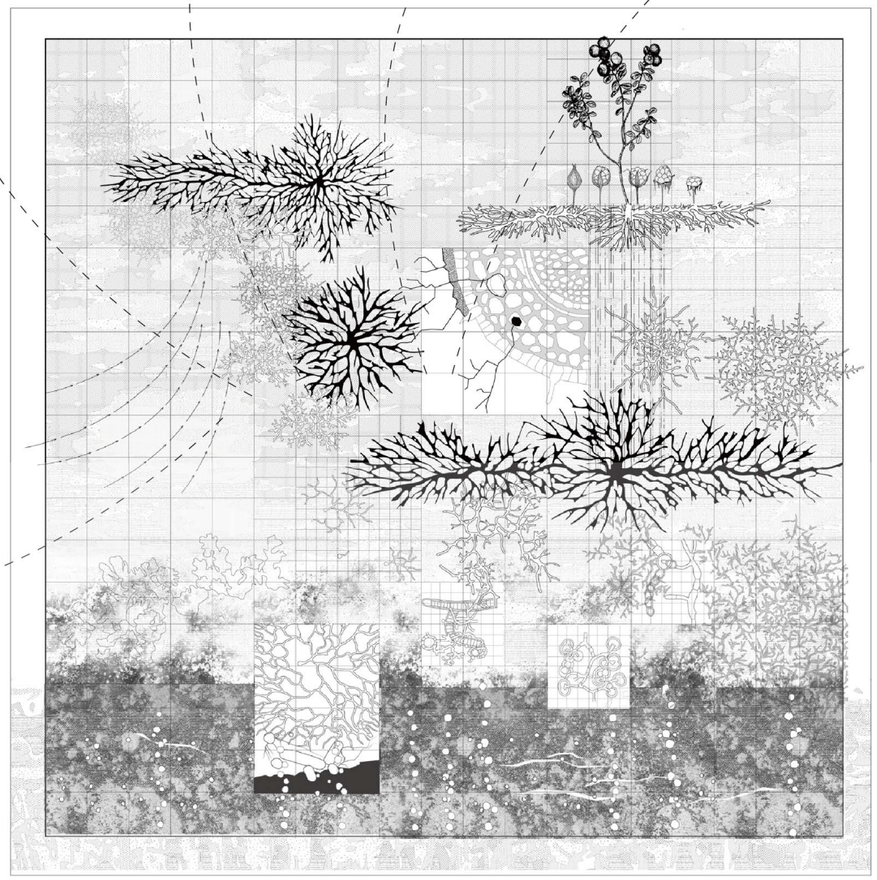
Coastal stabilization

Community shared garden stabilization

Eider habitat mitigatio







Country / City	Charlottesville, VA
University / School	University of Virginia School of Architecture
Academic year	Spring 2020
Title of the project	Tundra Stitch—Reimagining the Arctic Urban Tundra
Authors	Yangqianqian Hu and Qinmeng Yu

TECHNICAL DOSSIER

Title of the project	Tundra Stitch—Reimagining the Arctic Urban
Authors	Tundra Yangqianqian Hu and Qinmeng Yu
Title of the course	Ground
Academic year	Spring 2020
Teaching Staff	Leena Cho (Coordinator) and Matthew Jull
Department/Section/Program of belonging	Architecture / Landscape Architecture Traveling Research Studio
University/School	University of Virginia School of Architecture

Written statement, short description of the project in English, no more than 250 words

Utqiaġvik—formerly known as Barrow—is the northernmost city (71.3°N, 156.8°W) in the U.S. Arctic located on the Chukchi Sea, and is the North Slope Borough's largest city, a home to approximately 5,000 residents of which 63% are Inupiaq. The city is built entirely on continuous and ice-rich permafrost, which is extremely sensitive to any surface changes that alter the existing thermal regimes, including the diversity and insulating capacity of the tundra plants. Tundra plants are critical for permafrost and habitat preservation, coastal stabilization, ecological forecasting, gravel-road dust control, and the indigenous subsistence lifestyle.

Despite this importance, and the omnipresence of tundra plants surrounding the city, the role of plants is entirely missing in the official North Slope Borough and city of Utqiaġvik vision plans adopted in 2019 and 2015, respectively. Our project aims to fill this gap with a two-fold framework for creating an Arctic Urban Tundra: 1) a new urban tundra vision plan for the city of Utqiaġvik, and 2) a pilot project that reconfigures the urban center into an urban tundra park, integrated with city and public building facilities. The ultimate aim of the project is to foreground the cultural and ecological roles of tundra plants in the design and organization of an Arctic city, and to create meaningful public spaces highlighting the multivalent relationships between the plants and the local community.

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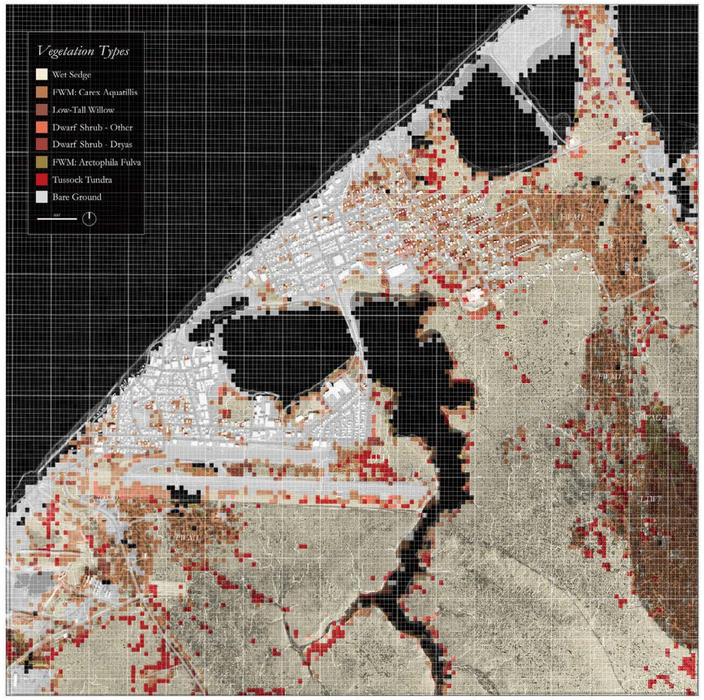
CLIMATE CHANGE AGAIN

11th International Biennial Landscape Barcelona

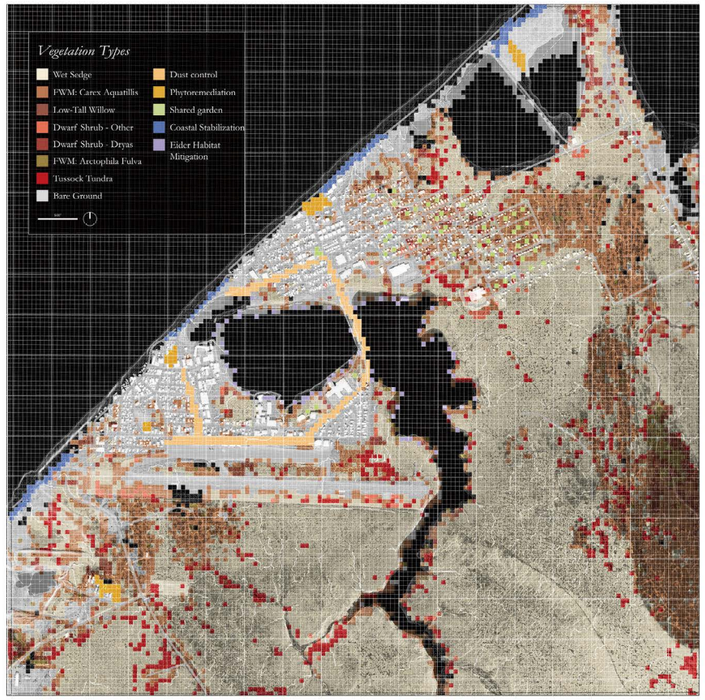
Barcelona September 2020

SCHOOL PRIZE



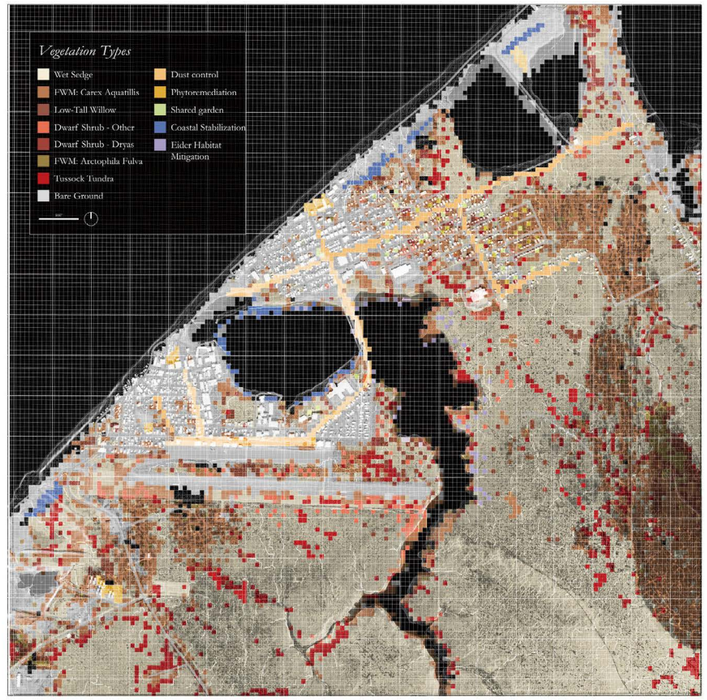
EXISTING TUNDRA PLANTS DISTRIBUTION

A dichotomy between nature and urban.



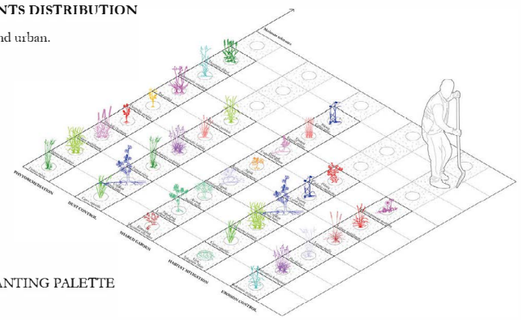
DESIGN STRATEGY: STITCH

Stitch the urban area and tundra area with plants for different functions.

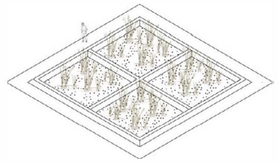


FUTURE MAP: ADAPTATION

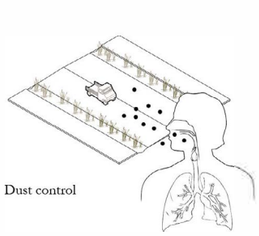
Coastline pushed inland, the tundra gets wetter and greener.



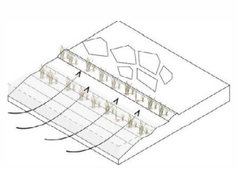
A HYBRID PRACTICE - PLANTING PALETTE



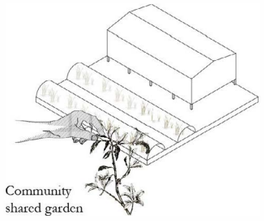
Phytoremediation



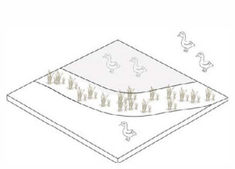
Dust control



Coastal stabilization

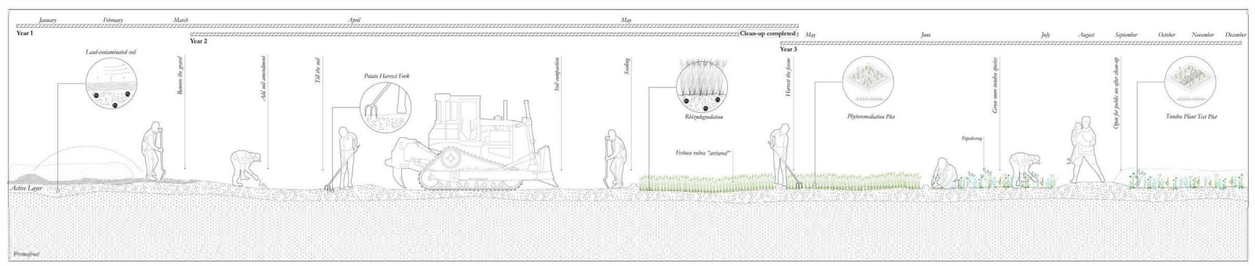


Community shared garden

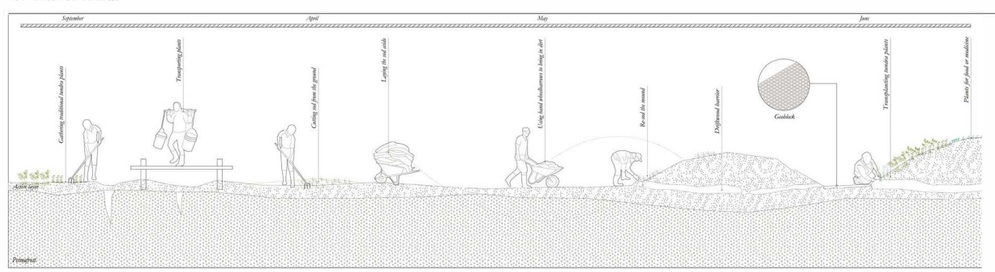


Eider habitat mitigation

PHYTOREMEDIATION

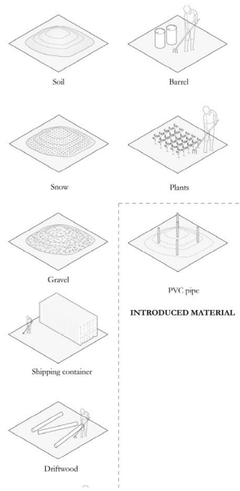


COMMUNITY GARDEN



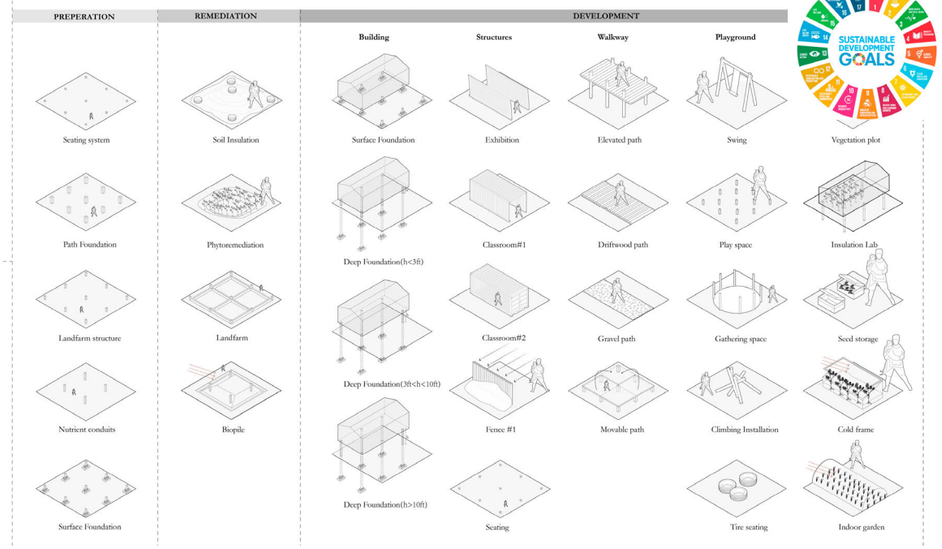
MATERIAL

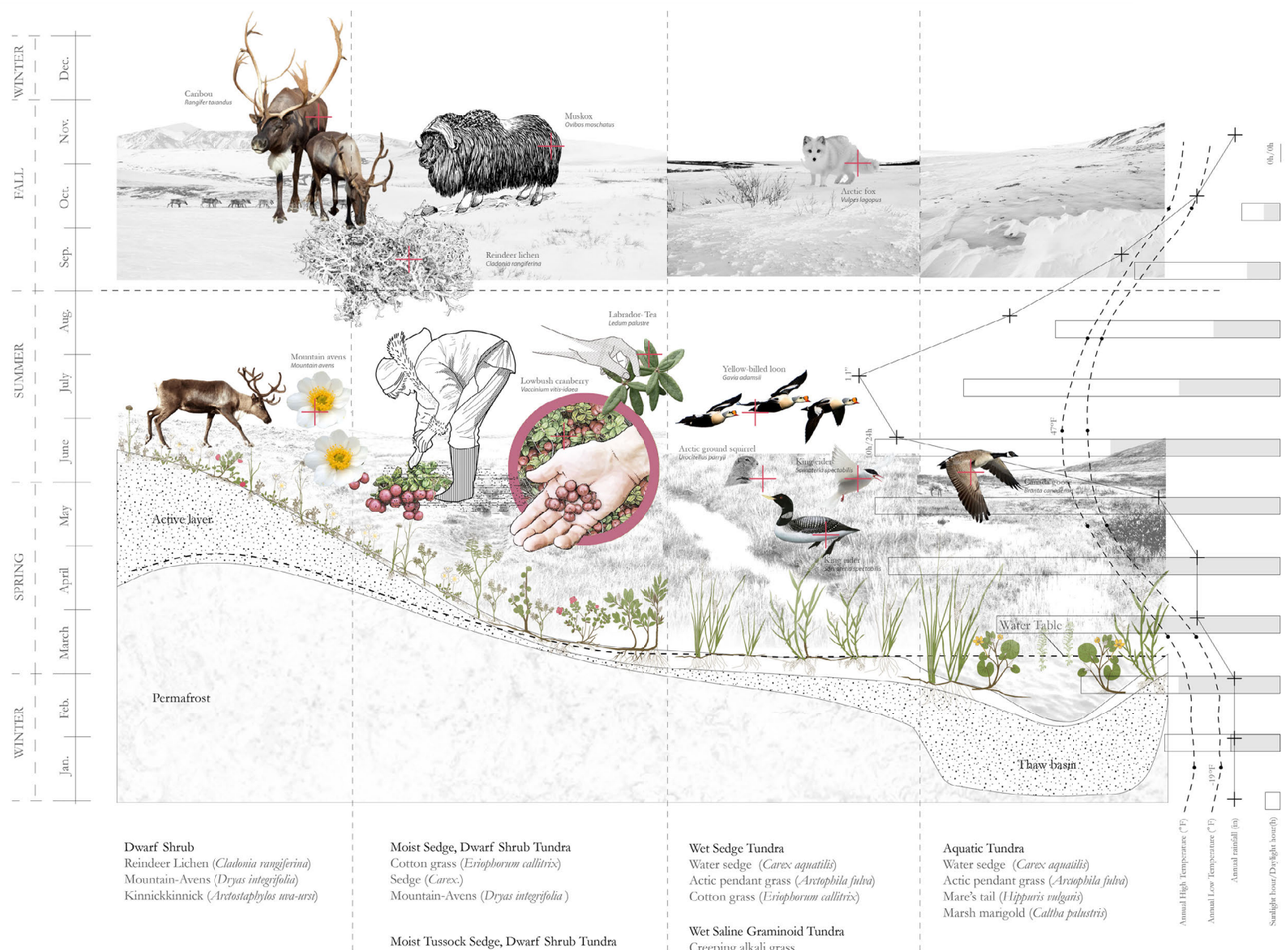
LOCAL MATERIAL



INTRODUCED MATERIAL

PHASING TOOLKIT





Dwarf Shrub
Reindeer Lichen (*Cladonia rangiferina*)
Mountain-Avens (*Dryas integrifolia*)
Kinnickkinnick (*Arctostaphylos uva-ursi*)

Moist Sedge, Dwarf Shrub Tundra
Cotton grass (*Eriophorum callitrix*)
Sedge (*Carex*)
Mountain-Avens (*Dryas integrifolia*)

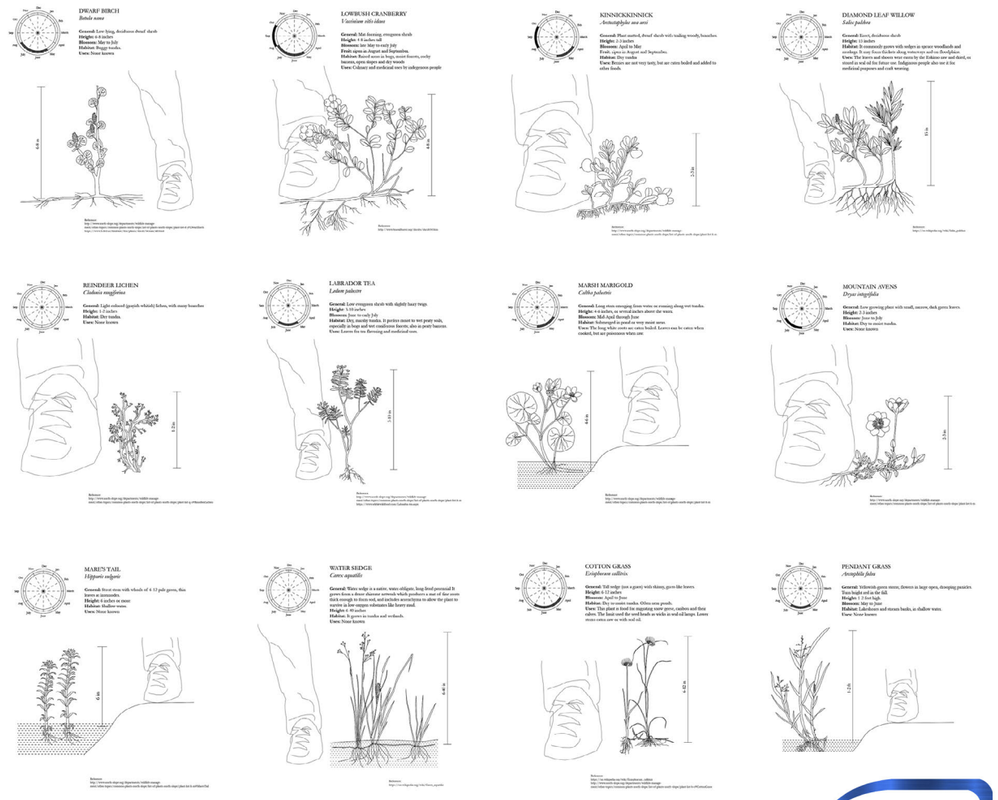
Moist Tussock Sedge, Dwarf Shrub Tundra
Cotton grass (*Eriophorum callitrix*)
Mountain-Avens (*Dryas integrifolia*)
Diamond-leaf Willow (*Salix pulchra*)

Moist Tussock Sedge, Dwarf Shrub Tundra
Dwarf Birch (*Betula nana*)
Lowbush Cranberry (*Vaccinium vitis-idaea*)
Diamond-leaf Willow (*Salix pulchra*)
Labrador- Tea (*Ledum palustre*)

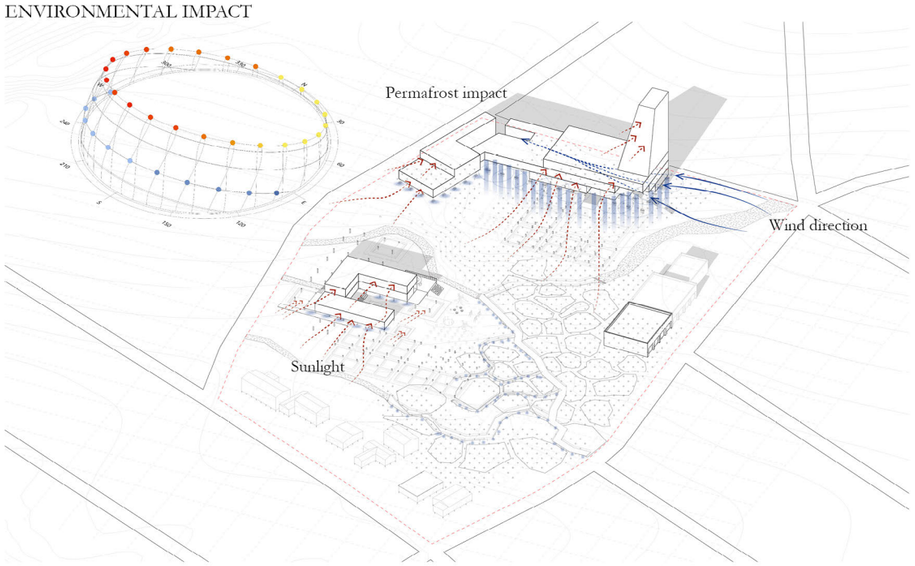
Wet Sedge Tundra
Water sedge (*Carex aquatilis*)
Actic pendant grass (*Arctophila fulva*)
Cotton grass (*Eriophorum callitrix*)

Wet Saline Graminoid Tundra
Creeping alkali grass

Aquatic Tundra
Water sedge (*Carex aquatilis*)
Actic pendant grass (*Arctophila fulva*)
Mare's tail (*Hippuris vulgaris*)
Marsh marigold (*Caltha palustris*)



ENVIRONMENTAL IMPACT



CULTURAL IMPACT