

MISSION:

“Promoting and advancing the development of healthy, durable, and sustainable shelter for Alaskans and other circumpolar people through applied research.”



Research • Innovation • Education



COLD CLIMATE HOUSING RESEARCH CENTER

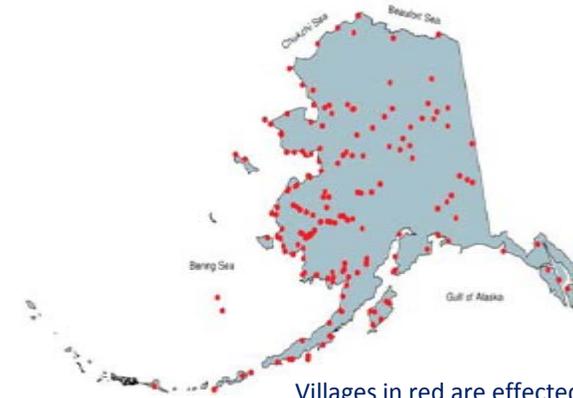
CCHRC



NEWTOK BACKGROUND

Flooding and erosion affects 184 of 213, or 86 percent, of Alaska Native villages to some extent, and at least six are in immediate peril from encroaching waters.

The Yup'ik village of Newtok in Southwest Alaska is one of these imperiled villages. It has experienced rapid erosion and the loss of its dump site and barge landing. It has been almost completely flooded in the last five years.



Villages in red are effected by erosion



The village of Newtok

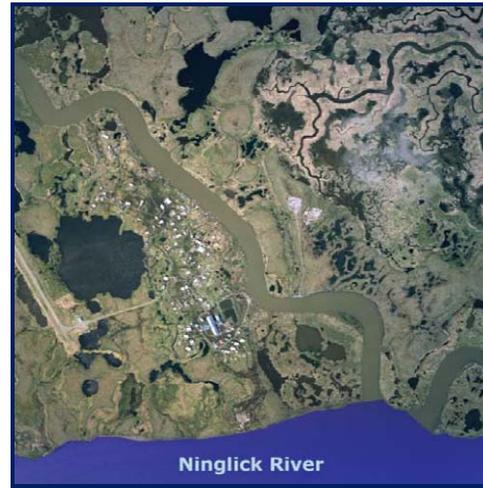


Area of rapid coastal erosion in Newtok

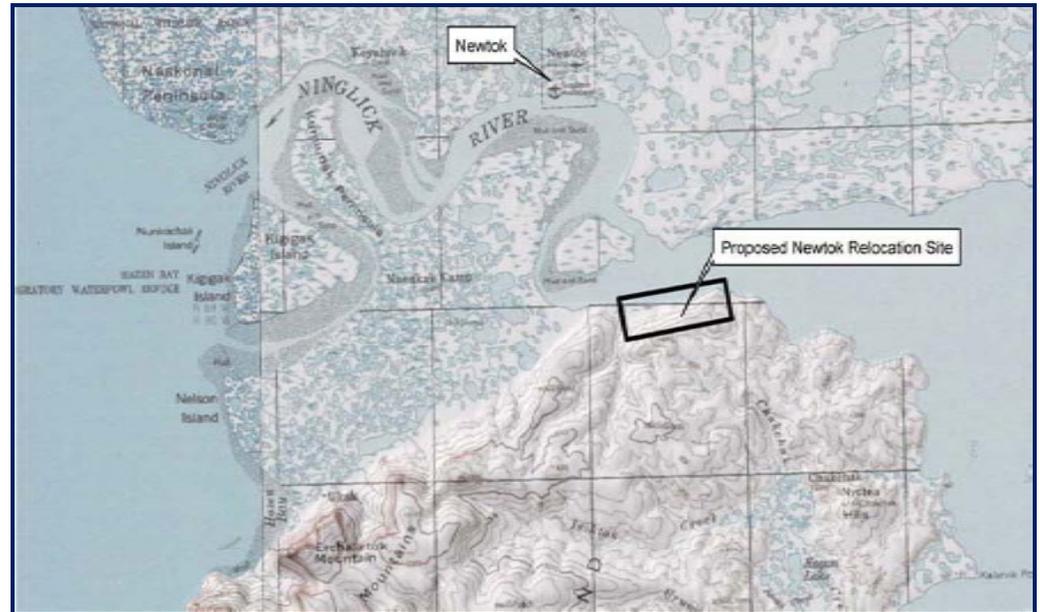


Recent steps thus far in Newtok's relocation effort include:

- 1. Funding for a Barge Facility at the New Village Site of Mertarvik**
- 2. Funding for Community Planning at the New Village Site**
- 3. Water Source Investigations and the Drilling of A Test Well**
- 4. Geotechnical Studies**
- 5. Building of Three Initial Homes at the New Village Site**
- 6. Design of Road, Air strip, and Gravel Pit at New Village Site**



Images showing extent of flooding in 2005, taken from interviews over aerial photographs



Map showing the relocation site of Mertarvik



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CCHRC implemented the Mertarvik Evacuation Center into their continuing SUSTAINABLE NORTHERN SHELTER (SNS) PROGRAM

The SNS Project is a multi-step, multi-year process involving many stakeholders.

The goal is to define and document a housing development process that leads to affordable, durable, healthy, safe, and context appropriate housing.

The SNS Project includes charette, test module, and prototype phases.



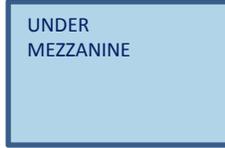
COMMUNITY DESIGN CHARETTE



CCHRC created a charette-planning team with the goal of engaging the community in the design of their Evacuation Center. Over three days in November, CCHRC team members met with representatives of The Newtok Tribal Council, The Newtok Planning Group, and the Department of Transportation during the charette day while having community-wide meetings in the evenings. The goal of the charette was to establish specific design criteria according to the particular needs and goals of the community.

CHARETTE SCHEDULE

DAY	MORNING	EVENING	DAY	MORNING	EVENING	DAY	MORNING
1	FLY-OVER SITE MEET WITH TRIBAL LEADERS WALK VILLAGE INVITE PEOPLE	VILLAGE MEETING DISCUSS CHARETTE PROCESS PRESENTATION	2	VISIT EROSION SITE VISIT HISTORICAL MOUND HOMES	DESIGN CHARETTE	3	MEET WITH D.O.T. DEPT. OF COMMERCE



COOKING
SPACE
350 SF



LUMBER STORAGE



RADIO – VHF 100 SF



RAIN COLLECTION



GARBAGE

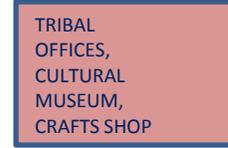
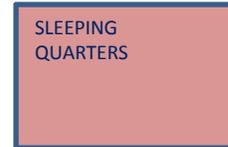
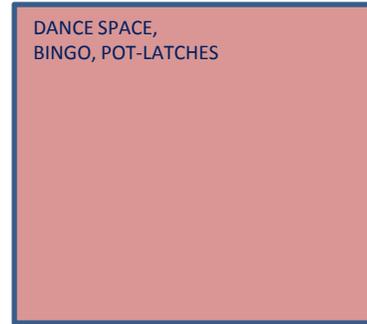


MEDICAL TRIAGE
200 SF

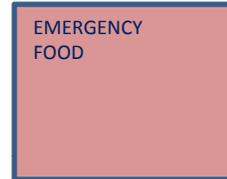


SECURE STORAGE BY
HOUSEHOLD
350 SF

The initial architectural program of the Evacuation Center came directly from the design charette and conversations with representatives of the Newtok Planning Group.



KITCHEN



SAUNA WOOD STORAGE



SEARCH AND
RESCUE



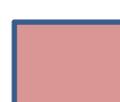
RAIN
COLLECTION



GARBAGE



CLINIC



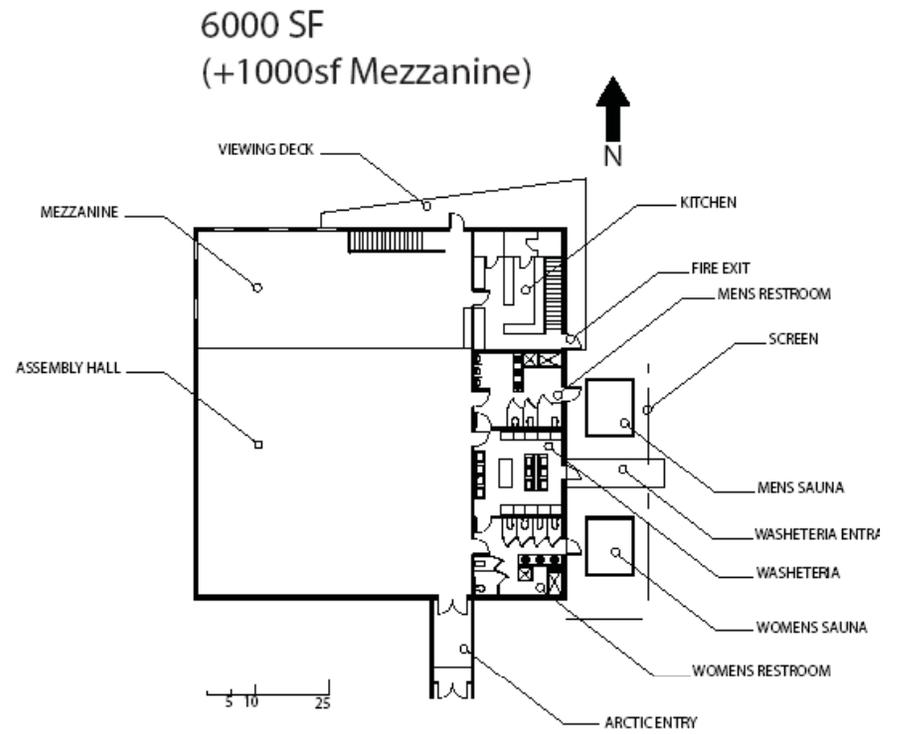
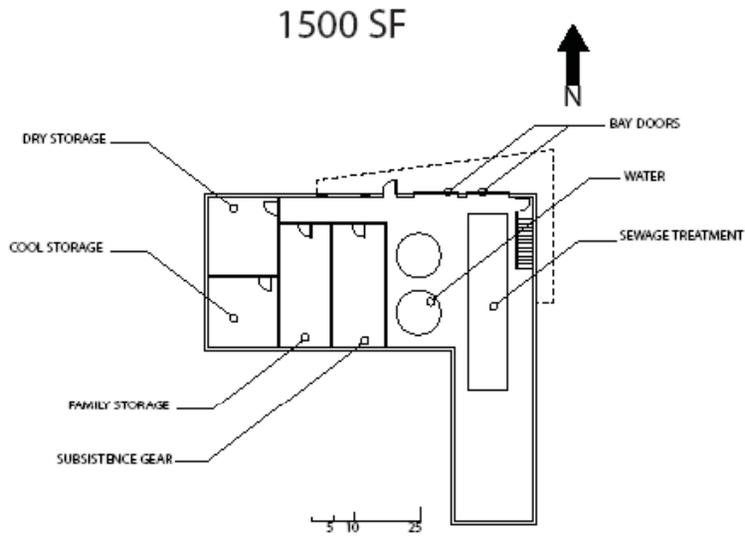
JAIL?
PUBLIC SAFETY

In order for the building to be sustainable and useful for years to come, foresight is necessary so that the spaces in the evacuation center can be re-assigned functions when the entire village has moved and the building becomes a community center.



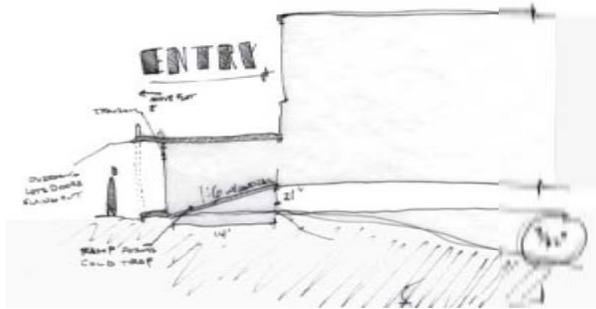


PRELIMINARY FLOOR PLANS





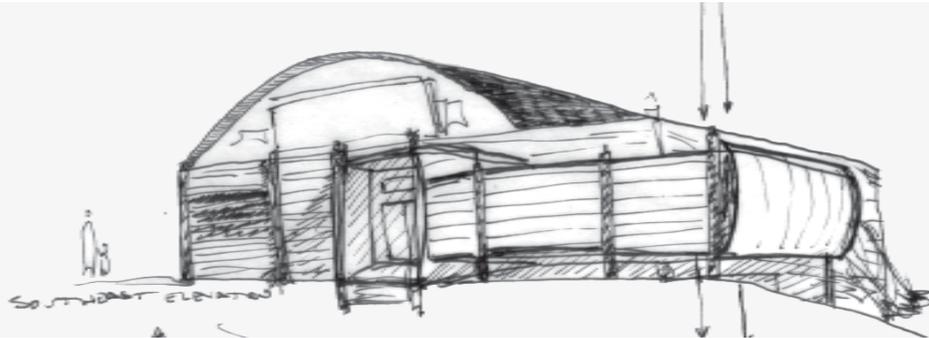
CONCEPTUAL SKETCHES



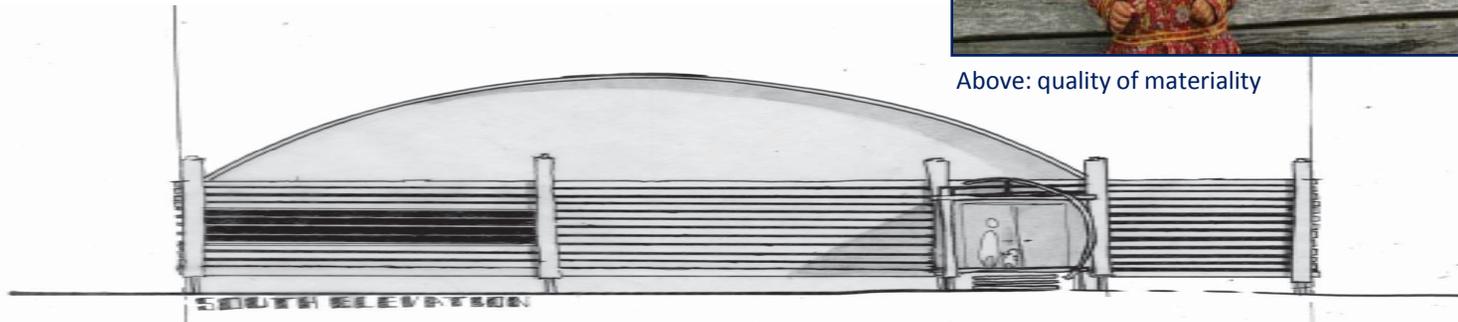
Above: modern cold trap (ADA accessible):



Above: quality of light



Above: quality of materiality

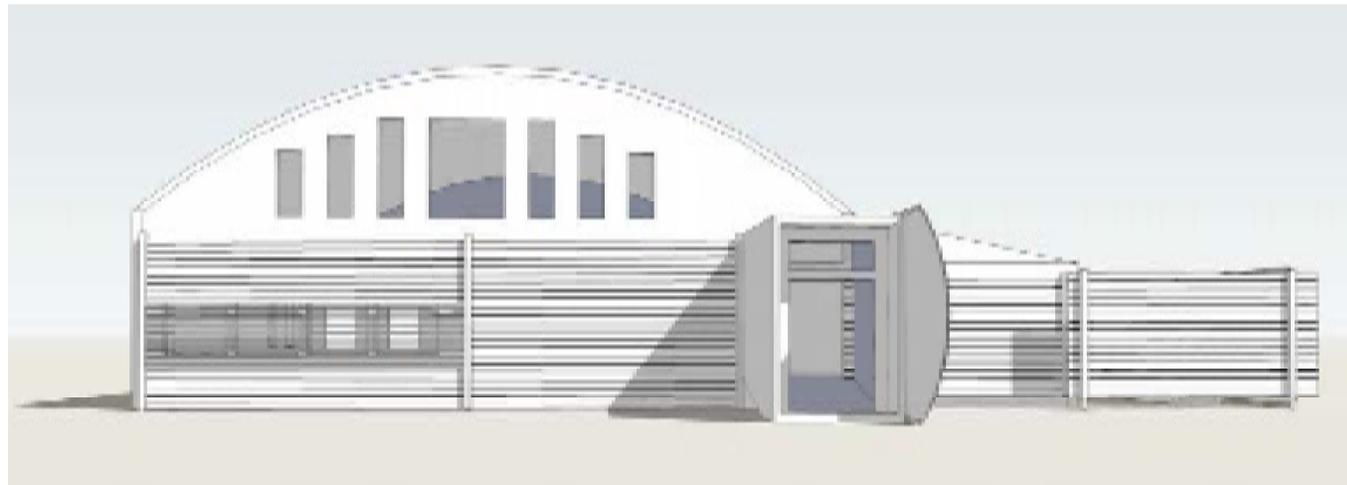




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CONCEPTUAL RENDERINGS



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