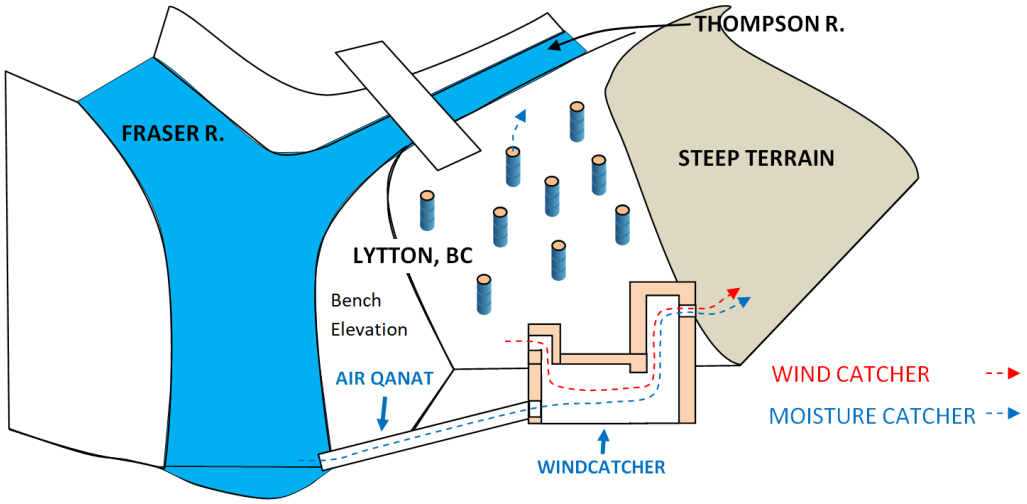
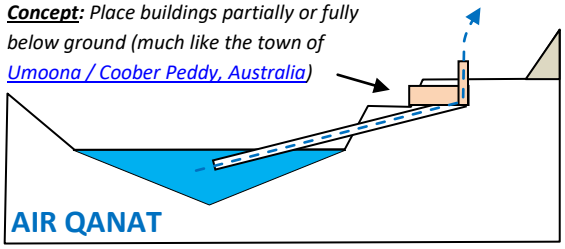
NOTE TO LYTTON STAKEHOLDERS	FROM THE OFFICE OF DAVID HUER	18-Jul-22

UNSEEN VALUABLE RESOURCES available for FIRE MITIGATION:

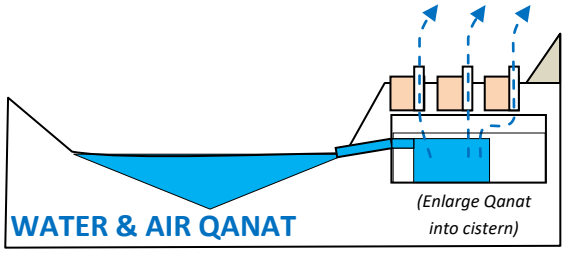
a) Rivers (Fraser & Thompson) = sources of three steadily-available resources: (i) moving freshwater, (ii) moist air, (iii) "air rivers" moving in confined channels
b) Valleys shape the movement of cool/warm Temperature Differentials, creating steady patterns of breezes and windflows, including updrafts
c) Fjord-like valley architecture creates opportunity to use Temperature Differentials to feed natural heat-activated Air-Cooling "Windcatchers"
d) Community's location creates opportunity to use one or both rivers as water sources for natural subsurface Moisture-Sourcing "Qanats"[1]
e) Could features be combined into *community-shared* and/or *individual building* cooling and fire defence systems, to lower temperatures at grade:
   a. Windcatchers acting as flues to draw moist and cool air to buildings and/or to ground beneath or at surface)?[2]
   b. Qanat delivers river water directly beneath village?



Concept: *Place buildings partially or fully below ground (much like the town of Umoona / Coober Peddy, Australia)*



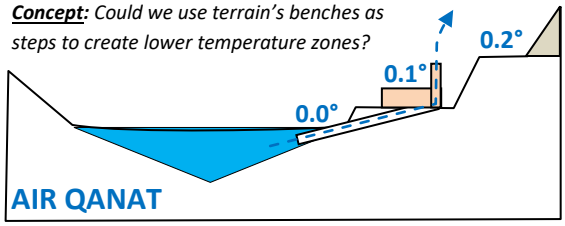
Concept: *Access using Communal Road cut into Bench*



Concept: *Expand Qanat into Cooling Pond (Cistern)*

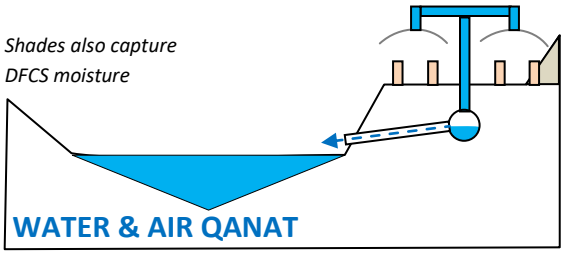
Concept: Enlarge Qanat into habitable cistern [for use as fire shelter, community centre, refrigerator, & all-season agribusiness centre (greenhouse?)]

Concept: *Could we use terrain's benches as steps to create lower temperature zones?*

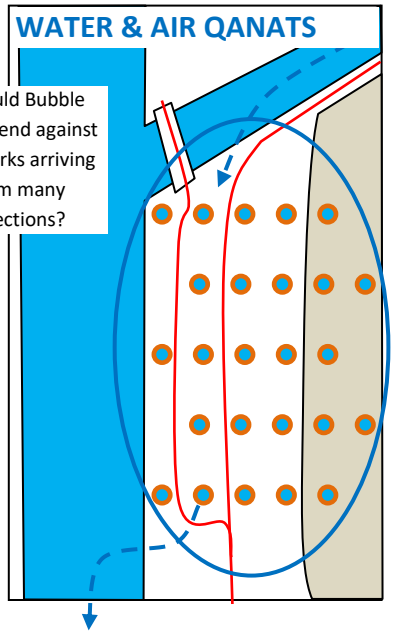


Concept: *Would re-locating townsite nearer the river help? (If needed, cutting a new bench for a new townsite)*

Shades also capture DFCS moisture



Concept: *Could misters & shades mitigate ignition?*



Concept: "District Fire Cooling System" (DFCS) created & operated by Community Development Corporation. Idea is to create a "Cooling Bubble" to minimize risk of ignition at defined height above grade.

Use the Thompson R. as source of coolant flows: to feed Qanat/Windcatcher system; directing outflows to the Fraser (natural flow = power mechanism). Could system also use micro-hydroelectric generators to *help self-power* the system; power *mist-spraying towers* to further cool the bubble area; and supply the local energy grid, with excess power sold to BC Hydro?

Concept: Determine height range to optimize cooling above grade: 0.5-m? 1-storey house? 2-storey?

MS Clip Art

[1] Qanats (underground aqueducts) move water from upland springs to towns. Here, the traditional design is called a "Water Qanat (WQ)" to distinguish the function from the idea here to employ moist air as a resource; to create the "Air Qanat (AQ)" innovation (capturing watercourse moisture to help create Cooling Bubble).
[2] DFCS concept uses natural resources and is similar to centralized "district energy systems (DES)": https://toolkit.bc.ca/tool/district-energy-systems-2/ If the DFCS concept is scalable: This creates opportunity to create a locally-operated design, engineering, and construction employer who builds DFCS's for BC communities.