For Want of Wind

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Le Théâtre Petit Cercle playfully engages the infamous southeasterly winds in this collaborative design-build project moored to a playground slide. Students from Dalhousie University School of Architecture and Planning and the community of Chéticamp, Nova Scotia, combined efforts to make architecture that builds on community spirit and a sense of place.

Any place where amazing winds blow, the local people give them names. In Chéticamp, Nova Scotia, the powerful southeasters are called *Suettes.* As often as five times a month in the spring, the winds in Chéticamp reach speeds of 200 kilometers an hour. They blow down from the plateau and whip across the old playground behind the school. All shingles in the town are battened down, double nailed, and tightly overlapped. Trucks hauling trailers stop traveling on the roads. Acadians returning to Nova Scotia a generation after their 1755 expulsion by the British founded the town of Chéticamp. Stories are told of how Acadians avoided deportation, living in this valley out of sight of the British Navy on land the British left unsettled because of the wind. Over time the French-speaking community developed a fishing economy and a way of dealing with the windy landscape.

In 2004, the town celebrated 400 years of European settlement in Canada. A festival, Le Troisième Congrès Mondiale Acadien, took place in Nova Scotia, and Chéticamp hosted many of the official events. Throughout the province 100 family reunions took place, some attracting thousands of descendants. In Chéticamp, the church and adjacent school provided three indoor spaces suitable for festival performances. Organizers added some temporary outdoor sites and talked optimistically about founding a permanent summer theater camp in an old playground behind the school.

Every July, instructors at Dalhousie University guide students through a short design-build project. In 2004 three instructors and their students went to work constructing a permanent outdoor children's theater that could be used for the festival as well as a future theater camp. Beginning with a surrealistic, derelict playground on a 12-foot-high plateau behind the school and $2,000 (Canadian), twenty-seven students and faculty were ready to design, build, and raise money for the theater. Fifteen days later we had a theater designed, built, and nearly paid for.

Chéticamp is in a remote location, five hours from the university. We camped on the site; with few resources we had to depend on the material and tools that had been crammed into a few cars. Scavenging forays into the community with sketchbooks and measuring tapes produced inspiration and some useable building materials: beach-washed cobbles, old bleachers, playground equipment, and wooden slats. For the first few days, we used conventional studio drawing and modeling techniques to develop several ideas, some of which we presented to the local school and theater group. Based on their feedback we began to pursue two strategies — the first, a theater that could be disassembled and hinged down for winter storage, and a second scheme for a permanent theater that would be "transparent to the wind," heavy enough to be anchored on the site, yet perforated to reduce the extreme wind load.

Using lessons learned from local wharves that are constructed with wood cribs filled with rock ballast, we decided to build using rock-ballasted wooden cribwork for the walls and to create a permanent theater with minimal wind resistance. This method of design development surprised the students. Studio projects had not prepared them to elaborate options for the client nor to develop a number of design strategies in parallel. Design and the early stages of construction quickly overlapped in models and mock-ups that combined envisioning with experimenting. As-built drawings recorded daily progress and facilitated discussions about issues such as structure, questions of detail. The necessity of quick, effective exploration was obvious. Physical models were useful in exploring concepts, but we all began to rely more and more on the qualities and characteristics of the actual materials placed in situ at 1:1 to determine the remainder. By the fifth day, the students no longer suspected that there had been a secret design prepared in advance by the instructors; they realized that the developing designs and the building's performance would be determined by experiment and experience. Working as designer builders, the students developed confidence and initiative in sorting out details and working on subprojects nested within the developing design framework.

Like a boat swinging downwind of its anchor in a storm, prow into the wind, the theater is anchored at one entrance by a playground slide. The wooden sides shelter the slip, and as insurance against getting airborne in the storm, the theater has rocks in its pockets: cobbles were placed in the slatted wood wall cavity to a height of 2 meters. Besides holding the rocks, the slatted wooden sides offer little resistance to the wind, breaking up the laminar flow along its surfaces and inside the theater to create shelter. Included in the collection of found objects and

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materials from the village were some existing weathered bleachers that were modified into an arc configuration to accommodate an audience of 180. The lens-shape theater measures 75 feet long and 32 feet wide and was designed to bring the audience as close to the stage as possible. The shallow curve of wall behind the stage faces a slightly larger curve sheltering six rows of seats.

Acting as the mooring post, a helical playground slide with its wind sock banner marks the main children's access and offers an opportunity for members of the audience to make an exciting, sliding "grand entry." A low child-height entry resulted from the diagonal geometry of the wood cladding. A more accommodating entrance can be made at the opposite end through a space that serves as a ticketing point or a spot for puppet shows or other small-audience performances. Each entry doubles as a stage wing during the performances.

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1. Photomontage of ring beam installation.
2. View from approach.
3. Aerial view of community.
4. View of nearby wind turbine.
5. Wharf with stone ballast.
6. Boat out of water.

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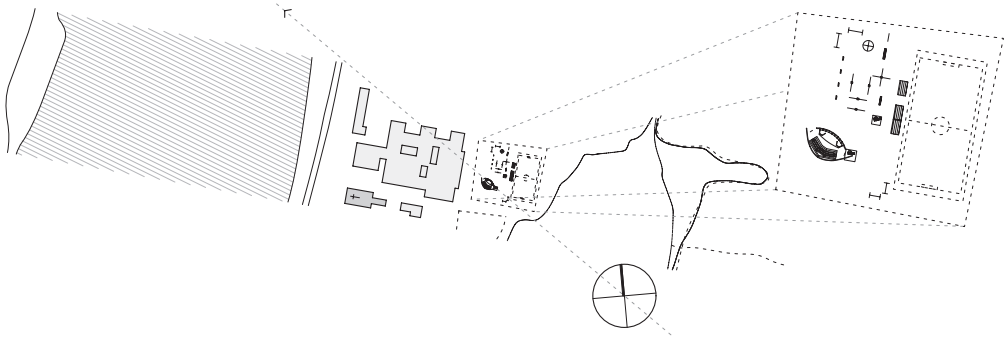
7–8. Rib construction in school shop.
9. Model of ribs and diagonal bracing.
10. View of ribs and bracing.
11. Laying out slatted wood wall at slide entry.
12. Local sheds.
13. View of *charette.*
14. Site on first day of construction.
15. Site plan.
16. Plan.
17. Section.
18. Drawing the building 1:1.
19. Acadian flag-windsock installation.
20. Side view showing suspended wall and stone moat.
21. One-piece ring beam.
22. View of group testing the space.
23. Installing the windsock.

The walls are woven onto a frame of 16-foot vertical ribs made from double one-by-fours laminated to each side of tapered wood blocking spaced from top to bottom. One-by-three-inch slats are set diagonally and screwed onto the inside and outside surfaces of the ribs. Fastened with deck screws, the slats act as cross bracing and create a four-inch "cavity" filled partway up with rock to ballast the light wooden structure during a *Suette.* Like boat hulls or baskets, the three-dimensional curvature creates overall stiffness with a relatively thin material. The entire wall assembly appears to float above the ground. Larger stones were suspended from the framing under the floor decking where it would work most effectively in anchoring the structure, creating a weighty structure that is transparent to the wind. The ground inside the theater is surfaced with smooth local stone that drains easily. The stone extends slightly beyond the footprint of the building forming a kind of moat that serves to differentiate the wooden structure from the ground and prevents grass from invading the structure.

This design framework evolved out of a set of



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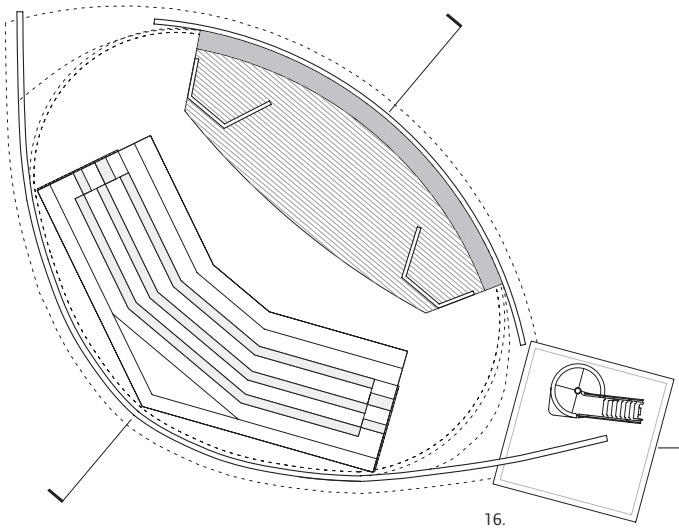

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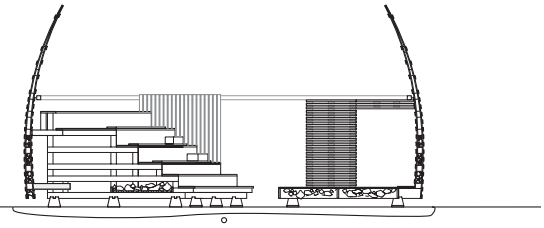

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pragmatic and aesthetic considerations many of them discovered in the field. For example, siting the theater became a subject of debate. Explorations of the on-site slide revealed a huge concrete foundation, and early plans to bring the slide to the theater were abandoned in favor of keeping the slide where it was and locating the theater around it. Rain that filled the excavation became a way of leveling the base and establishing drainage. The cribwork became its own scaffolding and the curvature in plan was adjusted to conform to the maximum bending the one-by-threes would tolerate (luckily they were still fairly green).

The ten-day construction period generated genuine excitement in the community and strength of purpose in the architect-builders, engendering a shared sense of ownership. Presently the structure functions as a successful children's theater in this unique French-speaking town and part of a very significant festival. The theater people are impressed by the acoustics and the way the building tempers the climate. They are already planning nighttime musical shows and imagining various lighting effects.

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Many qualities of the theater resulted from design decisions synchronized during the immediacy of construction, particularly those that mediated the climate and reflected local culture. The theater awaits its first full-blown *Suette*, constantly heading into the wind, traveling toward its second summer season.

Le Théâtre Petit Cercle is dedicated to the memory of Colin Gash, a friend, a student of architecture, and one of its designers and builders.

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24–26. Details of theater.
27. View from approach.
28. View of entrance during construction.
29. Wooden crib wall.
30. Round stones used for floor.
31. View into theater from above.
32. Photomontage of typical day.
33. Side view.
34. Night view of theater with church in background.
35. Night view of side elevation.
36. Nighttime gathering with fire.
37. Nighttime view of ribs and bracing.

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