"Lifeboat Ethics" under the Interstate: Seattle's Prototype Highway Fallout Shelter

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In the late 1950s, modest, single-family houses lined a quiet street called Weedin Place in north Seattle. The serenity of that typical middle-class neighborhood changed forever with construction of Primary State Highway 1, now Interstate 5. A child of the country's Cold War strategy, the Interstate System promised rapid military deployment critical to national security. (The Interstates destroyed blocks of historic residential and commercial buildings nationwide, leading to, among other environmental measures, the National Historic Preservation Act.) With the new ribbons of highways came perceived needs for travelers' safety during nuclear emergencies. Publicly owned rights-of-way seemed underused, ideal for sheltering those caught unprepared. Just over a month after the Cuban Missile Crisis, in November 1962, excavation began under I-5 on what was to be the first of many fallout shelters under freeways and highways around the country. Unbeknownst to all involved, the facility in Seattle was to be the only highway fallout shelter ever built in the United States.

Today the word "shelter" has entirely different connotations than it did during the Cold War. Battered women and children, the homeless and the hungry unfortunately populate our present-day shelters. In the early 1960s, everyone knew when a "shelter" was to be used, and its distinctive yellow and black signs were universally recognized. (Ironically, the sign's trefoil design's inspiration was the three-leaf clover used in Gothic architecture symbolizing the Christian Trinity.) The notion that shelters could preserve enough of the population and its will to fight derived largely from Britain's survival of "The Blitz" during WWII in "bomb" shelters, that is, underground bunkers designed to protect inhabitants from direct hits by conventional explosives. That civilians would be targeted in future nuclear attacks was a given. While about five percent of WWI's casualties and at least half of those killed in WWII were civilian, it was estimated that as many as 95 percent of the casualties in the next world war would be civilian.[i] At least some Americans held fast to the notion that a nuclear war could be won if enough citizens were protected from radioactive fallout in shelters.

On October 10, 1960, Washington Governor Albert Rosellini, Seattle Mayor Gordon Clinton, King County Board of Commissioners Chairman Howard Odell, and L.F. Kreiger of the federal Office of Civil and Defense Mobilization (OCDM) signed an agreement authorizing construction of the fallout shelter. Per provisions of the Federal Civil Defense Act of 1950 and Executive Order 10773, OCDM was to develop shelter designs and "publicly disseminate civil defense information by all appropriate means." Yet another justification was the National Policy on Shelter, in which the federal government conducted "a program, for research and demonstration purposes" of various kinds of fallout shelters, "including construction and use of highway fill [below the paved roadway] fallout shelters which also may serve a dual use . . . ." When not in use during emergencies, the shelter was to be used by the Washington State Patrol. The City of Seattle and King County agreed to develop emergency occupancy plans and conduct tours of the facility, and to provide food, bedding, and unspecified "Recreational Supplies" sufficient to support 200 people for two weeks.[ii]

The fallout shelter on Weedin Place was a "prototype community" fallout shelter, meant to serve as a template for an extensive network of similar facilities to be built under public roadways. (Fig. 1) Other prototype shelters not under roadways, partially or fully financed and built by the federal government, were well-advertised examples of how shelters could be designed for multiple public uses, such as schools and city halls. The OCDM intended to build at least one prototype shelter in each state as demonstration models to enlighten architects and the public in civil defense architecture.[iii] Due in part to cost considerations, very few publicly financed shelters were ever built across the country. In hopes of encouraging families to install their own shelters, the federal government built four other prototype shelters in Washington, all "family" facilities on private properties in Everett, Seattle, Spokane, and Yakima.[iv] Prompted by President John F. Kennedy's 1961 "shelter program," the federal government mostly left shelter preparedness to private citizens. Privately financed shelters pitted the rich and well-to-

do against the less fortunate, home owners against renters and apartment dwellers. Basic family shelters could cost $2,500 when median family income was only $5,315 in 1961.[v]

Fig. 1: A prototype highway shelter as envisioned by federal Civil Defense officials. Photo # 311-M-23-9, Record Group 311, Still Pictures Branch, National Archives, College Park, MD. Courtesy David Monteyne, University of Calgary.

While thousands of home owners nationwide did install their own underground shelters, the Weedin Place facility was apparently the first, and only, fallout shelter ever constructed in the US under a public roadway. It was built under what would become Interstate 5 at the height of the Cold War in part as a way to demonstrate more effective uses of public rights-of-way. C.D. Curtiss, the Commissioner of Public Roads, head of the Bureau of Public Roads (BPR, predecessor agency to today's Federal Highway Administration), proposed putting shelters under the Interstates as a way to save costs by combining needs of the national shelter and Federal-aid Highway programs and provide shelter for the traveling public. Commissioner Curtis emphasized that putting shelters under freeways was particularly advantageous in residential neighborhoods where costs of acquiring private property would be higher than in rural America, but where relatively denser populations would be served.[vi]

In the 1950s and 1960s, architects around the country designed buildings that accommodated "dual use" areas dedicated as both fallout shelters and spaces serving the owners' and occupants' needs. Very few "purpose-built" shelters were constructed to serve solely for that purpose. The shelter on Weedin Place was the exception to the "dual use" shelter in that its eventual use as a license/storage facility was meant to be its secondary, rather than primary, function. Nearly all shelters were, by design, all but invisible, identified only by the familiar trefoil black and yellow civil defense sign, but otherwise inoffensive to architectural sensibilities.[vii] During the Cold War the concept of sheltering even a portion of the population aroused passionate debate, with opponents expressing doubts about the efficacy of shelters themselves and contempt for civil defense as an act of hostile provocation. That debate was reflected in the American

Institute of Architects, whose membership included those who questioned architects' responsibilities to society, the nation, and the rest of the world.[viii] Although the federal government's reasons for contracting engineers to design the Weedin Place Shelter are not known, some architects' reluctant participation in civil defense may have influenced the federal agency's decision. More likely was the need to design a structure that functioned as a bridge supporting both live and dead loads (i.e., the Interstate and surrounding highway fill), and that task was best left to engineers.

Charles Ralls, the Director of the Regional Office of Civil and Defense Mobilization, first discussed the idea for this shelter with William Bugge, the Washington Department of Highways Director, on December 21, 1959. Bugge followed up his meeting with Ralls in a letter, stating his approval for the shelter under the future Interstate. To Bugge's letter was attached a sketch of the proposed shelter in its present location, shown as a 65 x 40 foot rectangular shelter. (Fig. 2) Only the month before, Bugge had rejected a suggestion by a Washington citizen that spaces under highways should be put to other uses. Bugge recited DOH and BPR policies forbidding installation of facilities that could bring damage via fire or accident to public roadways.[ix] In June 1960 the BPR approved the under-freeway shelter plan, but cautioned that additional costs would not be eligible for Interstate funding.[x] The federal OCDM agreed to pick up costs involved with removing fill from under the freeway approach. DOH's cost estimate of $1,300 for that work was approved, although the subsequent invoice reflecting a 358 percent cost overrun was returned unpaid to the Department.[xi]

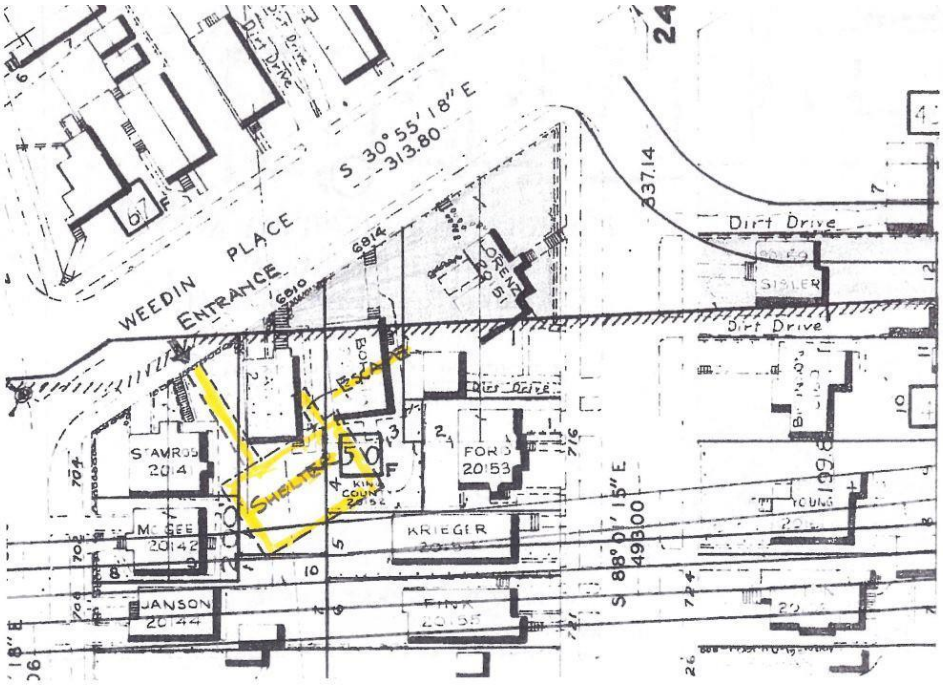

Fig. 2: Preliminary shelter plan, December 1959. Director's Files, 1959, Box I-19, Folder IV Federal, Department of Highways Records, Washington State Archives, Olympia.

Andersen Bjornstad Kane, a Seattle engineering firm, designed the shelter in early 1961. Built into the road fill under the north approach to the Ravenna Boulevard Overcrossing, the shelter actually functions as a bridge. Its circular outer, 15-inch-thick wall, stout center pedestal, and thick roof, all of reinforced concrete, support the south-bound lanes of I-5. (Fig. 3) In fact its shape probably reflects the engineers' calculations that a circular configuration would provide evenly distributed compression strength better than the rectangular structure shown on Director Bugge's preliminary plan drawing.[xii] Bjornstad, one of the designers, considered a two-story rectangular structure, but concluded that "the circular single story design appears to be the most economical for this project."[xiii] From the exterior, the shelter's circular outer wall is hidden behind the freeway fill slope and a concave concrete wall serving as the structure's primary

façade. (Fig. 4) The wall, which functions as a retaining wall preventing highway fill from encroaching on the entryway, gives the structure a Brutalist appearance. Its stark, unadorned smooth surface reflects what the facility's operating manual notes is its design "for survival rather than comfort."[xiv]

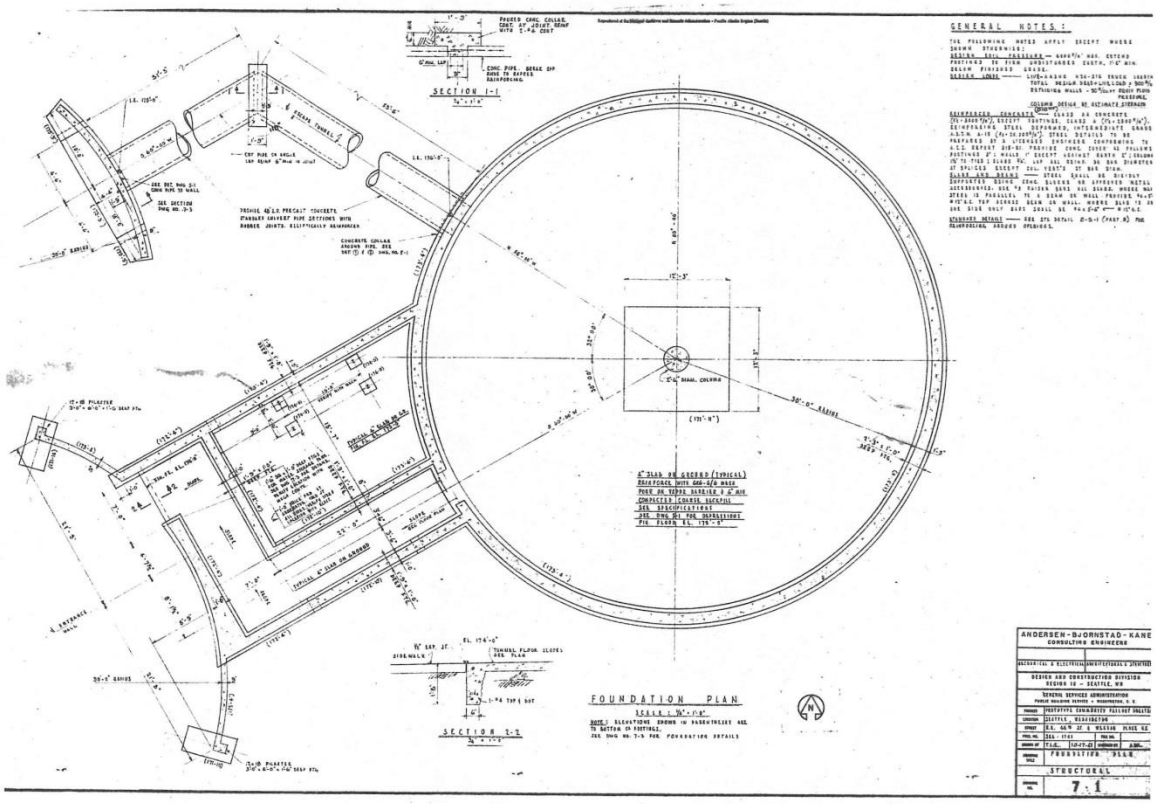

Fig. 3: Andersen Bjornstad Kane's foundation plan for the fallout shelter on Weedin Place, Seattle. Dated October 17, 1961. Bureau of Public Roads Records, National Archives and Records Administration (NARA), Seattle.

At slightly above street-level, the shelter's main entrance is a sliding, heavy metal grate accessing an underground concrete hallway leading to the facility's inner sanctum. The hallway's "L"-shape mimics standard shelter entries' right-angle turns designed to prevent gamma rays from reaching the structure's interior. Along the hallway is a utility/maintenance room, containing a diesel-powered electric generator; an air circulation system that includes electric heating and air conditioning units; a well, pump and pressure tank; and piping connecting the facility to the city water and sewer systems. (Although the design called for a 2,375 gallon emergency water supply tank, that was apparently never installed.) The shelter is equipped with decontamination showers and toilets (two for women, one for men plus a urinal), situated conveniently off the entrance hallway. On the far end of the cramped rest rooms, a four-foot diameter, precast concrete culvert exits from a small hallway to its aluminum gate-covered portal off the sidewalk a few feet from the main entrance. Labeled an "escape tunnel" on shelter plans, the burrow-like feature, with its requisite 90-degree gamma-ray turn, was installed to meet code requirements for emergency egress from public buildings.[xv] Imitative of the shelter's primary façade, at the tunnel's portal is a low, concave concrete wall that stabilizes the highway fill, preventing it from closing off the tunnel.

Fig. 4: Shelter façade as seen from Weedin Place, Seattle, on the day of its dedication, March 29, 1963. Courtesy Museum of History and Industry, Seattle.

Designed to accommodate 200 people for two weeks, the shelter's net communal living area provided roughly 9.13 square feet of living space for each shelter occupant, a footprint smaller than a modern personal yoga mat. At the center of the shelter's circular main interior, which measures approximately 60 feet in diameter, a 2-foot 6-inch thick concrete pier supports the 18-inch-thick concrete roof, nearly five feet of roadway fill, and the I-5 south-bound lanes. (Fig. 5) Stabilizing the pier and supporting that considerable weight is a concrete footing roughly 12 feet wide and nearly 3 feet thick lying beneath the shelter's concrete floor. A monotonous hum from the overhead traffic permeates the cavernous main activity area where shelter occupants were to sleep in triple-deck bunks, singles segregated by gender with families in between. Meetings, training and religious observances were also to occur in the central room, adhering to strict scheduling per shelter management plans. Behind a drywall originally to be painted "Flat White" to match the concrete walls of the main activity area (now an "institutional green"), an emergency medical center was equipped to provide no more than basic first aid. An office contains a black rotary telephone appearing ready for emergency calls. A second walled-off space across the main room is a later addition, dating to use of the facility for vehicle licensing and records storage. At the outer edge of the central area, a roll-away shutter covers a wide window above a long counter where canned and packaged food was to be distributed from the adjacent storage room. With no kitchen nor stove nor refrigerator, food preparation and preservation of perishables would have been impossible. Canned food could be warmed using body heat, suggested an operation manual. Similar Spartan living conditions were anticipated for shelter occupant's bathing opportunities, as reflected in the small (40-gallon) hot water heater mounted in the men's restroom ceiling. In fact, both "decontamination" and "emergency" labels are applied to the showers on the drawings, implying limited availability for shelter inhabitants. [xvi] Survival without comfort would likely have been a memory shared had the facility been occupied during the anticipated nuclear attack.

Fig. 5: Fallout shelter main living space, with (left to right) hallway leading to escape tunnel, food distribution room, emergency medical center, and office. Central pillar is in foreground. Photo by Craig Holstine, 2011.

According to the shelter's "Utilization Plan," "assignment of specific segments of the population to this shelter is not possible and occupation of available shelter spaces will necessarily be transient. . . . Since no specific segment of the population has been assigned to this facility, entry will not be denied to anyone until such time as the maximum occupancy has been reached." Shelter occupants would be permitted to bring in only items that "would increase shelter habitability," as well as medicines and "special health foods." "General purpose items will be turned into general supply for possible later re-issue for the good of all. Animals and pets will not be permitted into the shelter for obvious health reasons." "When the maximum occupancy of the shelter has been reached, . . . the manager will cause the doors to be closed and locked. Any persons remaining outside the shelter will be directed to proceed to the next nearest public shelter." No other public shelter is known to have existed in the vicinity, however.[xvii]

McDonald Construction of Seattle built what was then called the Seattle Freeway Prototype Community Shelter at a cost of $67,300. As with most Cold War facilities (such as NIKE missile silos, weapons research and manufacturing plants, communications centers, and the like), the shelter was installed with an urgency reflecting the mood of the nation's defense posture. The General Services Administration's construction contract specified that the shelter be completed within 120 calendar days from the notice to proceed.[xviii] When dedicated, its capacity had grown: it was then reported to have been built and supplied for use by 300 people, rather than the 200 occupants anticipated by its designers. Governor Rosellini was scheduled to have given the dedication address on March 29, 1963, but failed to join the Seattle mayor, chairman of the Board of County Commissioners, the State Patrol chief, and OCDM officials. Dignitaries approaching the shelter entrance were met by members of the Seattle Women Act for Peace organization, who offered handouts "attacking the shelter." [xix] By then the country was engaged in a

spirited debate about the effectiveness of shelters and the wisdom of President Kennedy's "shelter program." The Cuban Missile Crisis of October 1962 revealed the inadequacy of national shelter preparedness: the US had few shelters, and those were largely unstocked; emergency supplies were languishing in warehouses. In 1961 only about 60,000 shelters were habitable; by 1965, as many as 200,000, or one shelter for every 900 people, or one for every 266 households, had been built, leaving the vast majority of Americans unsheltered. By 1967, few shelters were under construction, and most shelter "spaces" were in urban downtowns in existing buildings not meeting shelter specifications. In 1969 the civil defense budget hit a record low, allowing very little for the shelter program.[xx] Contributing to diminishing shelter importance were nuclear missiles on Soviet submarines cruising relatively short distances off US coastlines, rendering shelters virtually useless when attack preparation time would be mere minutes. As the likelihood of scampering underground became more remote, Americans' attention was diverted elsewhere, and "prototype" shelters had become forgotten reminders of Cold War hysteria eclipsed by war in Southeast Asia and domestic civil unrest.

Subsequent to its 1963 opening, the prototype shelter in north Seattle served as a Washington State Department of Licensing office where countless citizens peacefully renewed their driver's licenses. Later the Washington State Department of Transportation (WSDOT) stored files in the facility. Today WSDOT's unused furniture is stacked high in every usable space in the shelter, reflecting the agency's shrinking workforce. Unlike other structures in the neighborhood, the shelter's "bunker architecture" symbolizes the "lifeboat ethics" of the Cold War when it was taken for granted that some, perhaps only a select few, would survive the inevitable conflagration.[xxi]

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[i] Kenneth D. Rose, *One Nation Underground: The Fallout Shelter in American Culture*, New York University Press, New York, 2001, 4.

[ii] Highway Fill Shelter Project Agreement, 10 October 1960, Seattle Freeway 1959-61, Box 31, Department of Civil Defense (DCD) Records, and Governor Albert D. Rosellini Papers, Washington State Archives (WSA), Olympia.

[iii] David Monteyne, *Fallout Shelter: Designing for Civil Defense in the Cold War,* University of Minnesota Press, Minneapolis, 2011, 191.

[iv] Philip D. Barton, Regional Director, to Washington State Department of Civil Defense (DCD), 25 November 1960, Shelters-Prototypes, 1959-62, Box 32, DCD Records, WSA, Olympia; Civil Defense Scrapbook, August 1957-December 1962, WSA, Eastern Regional Branch, Cheney.

[v]Rose, *Underground*, 190.

[vi] C.D. Curtiss to Lee A. Hoegh, Federal Civil Defense Administration, Battle Creek, Michigan, 18 December 1957, Seattle Freeway 1959-61, Box 31, DCD Records, WSA, Olympia.

[vii] Monteyne, *Fallout Shelter*, 226.

[viii] Jan C. Rowan, "The Shelter Program" and William H. Scheick, "The Other Side of the Coin," *Journal of the American Institute of Architects* Vol. 38, No. 6 (December 1962):68-69.

[ix] William Bugge to Senator Warren Magnuson, 4 November 1959, and Bugge to Charles Ralls, 23 December 1959, Director's Files, 1959, Box I-19, Folder IV Federal, Department of Highways Records, WSA, Olympia.

[x] Bugge to Ralls, 7 June 1960, Box 31, Seattle Freeway 1959-61, DCD Records, WSA, Olympia.

[xi] Philip Batson to State of Washington Department of Civil Defense Director, 16 June 1960, Seattle Freeway 1959-61; DOH Invoice, 4 March 1968; OCD Note to Files, 21 January 1969; and Phillip H. Miller,

OCD Contracting Officer, to Washington State Highway Commission, 21 May 1969, Seattle Freeway 1963-70, Box 31, DCD Records, WSA, Olympia.

[xii] Robert H. Krier, retired Washington State Department of Transportation bridge engineer, personal communication, 2014.

[xiii] Frank H. Chick, Office of Civil Defense Mobilization (OCDM), to H.P. O'Reilly, WA State Hwy Commission, 8 February 1961, Seattle Freeway 1959-61, Box 31, DCD Records, WSA, Olympia.

[xiv] Interim Shelter Management Guide, Seattle-King County Civil Defense Organization, March 1963, p. 1-1, Box 31, Seattle Freeway 1963-1970, DCD Records, WSA, Olympia.

[xv] "First of Its Kind," *Western Architect and Engineer* (February 1961):5; General Services Administration (GSA) specifications and drawings, Record Group 30, Bureau of Public Roads Records, National Archives and Records Administration (NARA), Seattle; Seattle Freeway 1963-1970, Box 31, DCD Records, WSA, Olympia.

[xvi] Interim Shelter Management Guide, Seattle-King County Civil Defense Organization, March 1963, p. 1-1, Seattle Freeway 1963-1970, Box 31, DCD Records, WSA, Olympia; Krier, personal communication, 2010.

[xvii] Public Fallout Shelter Utilization Plan for the State Highway Fill Shelter (Prototype), March 1963, Seattle Freeway 1963-70, Box 31, DCD Records, WSA, Olympia.

[xviii] GSA Specifications, RG 30, BPR, NARA, Seattle; Seattle Freeway 1963-1970, Box 31, DCD Records, WSA, Olympia.

[xix] Dedication Program, 29 March 1963, Seattle Freeway 1963-70, Box 31, DCD Records, WSA, Olympia; *Seattle P-I*, 30 March 1963, p. 5.

[xx] Rose, *Underground,* 202, 206.

[xxi] Monteyne, *Fallout Shelter*, 174; David Monteyne, "Shelter from the Elements: Architecture and Civil Defense in the Early Cold War," *The Philosophical Forum* Vol. XXXV, No. 2 (Summer 2004):191.