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**Governing from the Bunker – where would the government go after the end of the world?¹**

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From the Iron Age hill fort with imposing earthen ramparts to the tall stone keep in the medieval castle, the centre of government throughout history has been kept secure from outside threats – and also from internal dissent and disruption. The design of structures from which to govern in times of crisis, providing a greater sense of safety and physical security, are important in the development of architectural forms. These buildings often received priority in terms of geographical locations and lavish spending - such structures would be the last bastion for the country’s elite and their entourage.

In the modern era, the bunker is emblematic of such buildings, expressly designed to protect the powerful, to preserve governments. They are one of the most distinctive architectural forms of the twentieth century, sculpted in metres-thick reinforced concrete and highly functionalist, designed to resist high pressure blast waves and ground shocks. When the British State faced its ultimate existential threat in the Second World War and in the decades long Cold War which ensued it called upon engineers, planners and architects to construct a raft of new bunkers spaces in both city centres and remote locations across the country to ensure the continuity of government.

¹ Thanks to Wayne Cocroft (Historic England) and Richard Brook (Manchester School of Architecture) for providing background information and images.
Building security for the State in subterranean bunker spaces

The fears of unannounced attack from the skies grew in the 1930s. The risks of aerial bombing and poison gas attacks in areas far beyond the battlefield was articulated by the British PM Stanley Baldwin when he famously asserted that the ‘bombers would always get through’\(^2\). The dangers to civilian populations in large cities became reality during the Second World War and prompted the State to develop new means of governance in terms of mass evacuations, blackouts, air raid warning systems, organising civil defence units and,

\(^2\) In a Parliamentary speech in November 1932 he said: “I think it is well also for the man in the street to realise that there is no power on earth that can protect him from being bombed. Whatever people may tell him, the bomber will always get through”, source: [http://hansard.millbanksystems.com/commons/1932/nov/10/international-affairs](http://hansard.millbanksystems.com/commons/1932/nov/10/international-affairs). In this period the terrifying spectre of cities being devastated by a night-time aerial raid was vividly portrayed in the 1936 film *Things to Come* (written by H.G. Wells, Dir. William Menzies). A year later this kind of terror would be realised with the notorious bombing of the town of Guernica in Spain.
in particular, the provision of underground shelters that offered physical protection from everything but a direct hit\textsuperscript{3}.

Vast underground facilities were also created to protect essential factories and munitions stores from aerial attack\textsuperscript{4}; subterranean bunkers moulded out of tons of concrete were constructed as part of extensive anti-invasion fortifications\textsuperscript{5}. Bunkers for military command and senior government officials were built under city centres. While these facilities offered physical protections, the psychological dangers of a bunkered existence were evident.\textsuperscript{6}

The 16\textsuperscript{th} July 1945 marked the beginnings of new kind weapon and one that prompted architectural responses in furthering the design of the bunker form as the most viable means of protecting those in power. According to architectural theorist Paul Virilio in his influential philosophical and aesthetic study of the Atlantic Wall along the French littoral, such a structure is:

“Anachronistic in normal periods, in peacetime, the bunker appears as a survival machine ... . It speaks to us of other elements, of terrific atmospheric pressure, of an unusual world in which science and technology have developed the possibility of final disintegration.”\textsuperscript{7}

The ultimate defence of the British State in the new era of atomic warfare would be the bunker, with staff enclosed in utilitarian windowless rooms fitted out with basic Ministry of Supply furniture. Government bunkers were often buried, or at least semi-sunken, to provide some additional protection from blast, gamma radiation and heat flash and sealed atmospherically from the outside to defend against toxic fall-out.


\textsuperscript{6} The emergence of a bunker mentality in leadership groups living underground and divorced from world beyond the thick concrete walls was powerfully dramatized in the 2004 film *Downfall* (German: *Der Untergang*, Dir. Oliver Hirschbiegel) depicting Hitler’s desperate state of mind buried in the Führerbunker in Berlin. See also Hugh Trevor-Roper, Arthur Tedder, *The Last Days of Hitler, Vol. 4* (Macmillan, 1947).

Secretive parts of State apparatus were active through the post-war decades of the Cold War in planning its own survival. Much of the work was conducted covertly, in large part because the contingencies of cost meant that there was no feasible way to provide civilian shelters for masses. If nuclear bombs fell on British cities with the rising mushroom clouds announcing the end of the world above ground, it was planned that the survival of the State would commence by a small number of hand-picked typists, civil servants and technocrats, overseen by cabinet politicians, senior officials and high-ranking military officers, in a series of underground bunkers distributed across the country.

Bunkers were the site in which the future of the world would be governed after the world had gone MAD\(^8\). The ruling elite believed, at least initially, that they could rely on architectural design, advanced structural engineering and specialised communications equipment to try to make itself invulnerable from this new threat and still effect functioning government. The people would have to make do with improvised shelters in their homes, made from wooden doors and carpet\(^9\).

However, the degree to which the promise of the bubble of relative order and safety inside the bunker, fully insulating from the chaos of the outside world, was doubtful of course, particularly so by the late 1950s with the development of the hydrogen bomb delivered by ICBMs. The immense scale of destruction of cities and their population wrought by multi-megaton blast was hard to conceive, and in many respects remained beyond popular imagining.

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\(^8\) Mutually Assured Destruction.

\(^9\) This gross inadequacy of civil protection was powerful satirised in the 1986 animated film *When The Wind Blows* (Written by Raymond Briggs, Dir. Jimmy Murakami).
Figure 2: Diagrammatic summation of the effects of a 10 megaton ground burst hydrogen bomb. Heat flash and gamma radiation effects relate only to people unprotected. The longer lasting radiation poisoning from fall-out is not shown. Source: author extract from Home Office, Nuclear Weapons (HMSO, 1956), p.55.

Given resource constrain and inadequacy in design of some bunkers the degree of functional self-sufficiency in sealed space in terms of air, water, sewage and power over even a few days, let alone the weeks and months needed for the dangers of fall-out radiation to subside, has been questioned\(^1\). Notwithstanding these practical details, there would have deep psychological distress felt on the staff locked inside their concrete cocoon and expected to try to maintain a semblance of government, knowing that all their families and friends would very likely have perished in the initial nuclear firestorms or from later radiation poisoning. Herman Kahn, a grand strategist of nuclear warfare at the US Rand Corporation acknowledged this, asking whether the “survivors would envy the dead”\(^2\).

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\(^1\) A useful examination of the material forms and some of the social meanings of such bunker spaces is provided by Tom Vanderbilt, Survival City: Adventures Among the Ruins of Atomic America (Princeton Architectural Press, 2002). A wide ranging photographic survey is given by Nick Catford, Cold War Bunkers (Folly Books, 2010).

Yet the fundamental tenant of continuity of government remained one of the bedrocks of defence policy of the nuclear states throughout the Cold War – and endures up to the present day in ‘war on global terror’ – and would over the years absorb many millions of pounds of capital investment in what proved to be worthless bunkers.

**Governing Region 10 - Nuclear North West**

In post-war Britain various organisational schemas for governing the country on a region-by-region basis after the nuclear Armageddon were planned out. In these plans the North West (broadly the counties of Cheshire and Lancashire) was designated Region 10. Under an initial schema from the early 1950s, a Regional Commissioner and his staff of about 50 would have governed the area from a War Room centrally located in Cheadle, just outside Manchester. This approach to continuity of government was premised on the idea of atomic warfare being comparable to the experience of Second War World Blitz – except with bigger explosions – and this is reflected in the location and scale of the War Rooms themselves and that their primary role would be coordinating rescue and immediate relief operations. The interior design of the War Rooms was centred around a large mapping room where incidents reports would be displayed and from which resources could be deployed.

The development of thermonuclear weapons and the Soviet testing their own megaton yielding hydrogen bomb in 1955 marked the strategic transition in the post-war British Government’s appreciation of the impacts of nuclear warfare and the widespread and long-lasting effects of fall-out. This was reflected in a new governance structure based on the establishment of the Regional Seats of Government (RSGs) which entailed building larger, stronger bunkers able to support a many more staff for much longer periods. An individual RSG might have to independently operate for months and “would not try to restore anything like normal conditions, but would see that law and order and some machinery of administration was maintained, to see that the best use was made of remaining

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12 It was situated in the grounds of the Alexandra Hospital on Mill Lane. It was operational as a War Room from 1952-58 and then was used as sub-regional control centre and then an emergency centre for Manchester. More details are given at www.pastscape.org.uk/hob.aspx?hob_id=1334814
resources”\(^\text{13}\). The notional compliment of 430 staff in these bunkers would reflect a miniature version of Whitehall, with most key functions of government represented along with large number of military liaison personnel. The Regional Commissioner would have wielded sovereign executive authority. Public communications via radio were to be conducted through the provision of a small broadcast studio to be manned by BBC personnel.

But continuing constrains on capital spending on civil defence and the costs of new bunkers meant the RSG approach often reused structures. This was the case for the RSG for the Region 10 which was situated in an ad-hoc converted barracks building on the Fulwood Army Base, outside of Preston.

Region 10 would also have been a main target area in the Cold War. The Merseyside-Greater Manchester corridor was the largest concentration of population and commerce outside of the London area. The nuclear North West was central also in the atomic-military-industrial complex with many strategically significant sites for R&D and manufacturing in the region including the ‘V’ strike bombers, air defence missile systems, and advanced digital computing. The building of Britain’s independent nuclear arsenal also required one the largest industrial efforts ever undertaken by the government and all the production of weapons-grade uranium and plutonium was conducted at sites in the North West region from the late 1940s onwards\(^\text{14}\). This work was directed from facilities at Risley, near Warrington. The semi-secret entanglement of civil nuclear power and the military weapons programme would continue for decades\(^\text{15}\).

There were various other bunkers built for war fighting and military operation in North West region, along with secure sites relating the utilities, hardened telecommunication facilities,


\(^\text{14}\) Detailed contemporary description is given in K. Jay, *Britain’s Atomic Factories* (HMSO, 1954)

\(^\text{15}\) Sheila Durie, Rob Edwards, *Fuelling the Nuclear Arms Race* (Pluto Press, 1982). Much of the Britain’s nuclear industry remains to this day concentrated in the north west of England.
county and district centres for civil defence, strategic stores and equipment. There were also several Royal Observer Corp underground monitoring posts and command centres\textsuperscript{16}.

From the end of the 1960s and through much of the 1970s continued budget cuts and a sense of diminished nuclear threat emerging from international détente led to a winding down of civil defence; many bunkers were mothballed and others were abandoned. However, this situation was reversed with the ramping up of Cold War tensions under Reagan and Thatcher in the early 1980s, highlighted by the Government’s decision to buy Trident submarine system and allow American Cruise missiles to be deployed at the Greenham Common airbase. At this time there was also renewed emphasis on the continuity of government and significant spending on a new programme of bunkers, known as Regional Government HQs. For Region 10 this entailed the use of strengthened basement in civil service building in Southport and an expensive conversion of a 1950s era bunker at Hack Green, near Nantwich in Cheshire.

Command and control sites:


Food storage depots:

a. Railway Station, Preston Rd, Grimsargh; b. Brownedge Lane, Tardy Gate, Preston; c. Gregson Lane, Highton; d. London Road, Adlington; e. Stanley Street, Blackburn; f. Taylor Street, Clitheroe; g. Feniscowles, Blackburn; h. Marston Sheds, Hornby Rd, Clauton; j. Orrell Lane, Burscough; k. School Bridge, Dunham Town; m. Raglan Rd, Sale; n. Dunham Hill, Thornton Le Moor; p. Mickle Trafford; q. Waverton; r. Tarporley; s. Tattenhall; t. Knutsford Rd, Chester.

Figure 3: Location of strategic sites in the early 1980s that would have been engaged in the effort to govern Region 10 in the event of nuclear war. Source: Robert Poole, Steve Wright, Target North-West: Civil Defence & Nuclear War in Cumbria, Lancashire, Manchester, Merseyside and Cheshire (Richardson Institute for Peace and Conflict Research, University of Lancaster, 1982). Available at http://digitalarchive.wilsoncenter.org/document/110194
Region 10.2 RGHQ bunker – Hack Green (SJ647483)

Lying in the pastoral landscape of the Cheshire plain adjacent to the Shropshire Union Canal is one of the most noteworthy bunkers in the wider Manchester area and one that would have had governmental reach across large parts of North West region in the 1980s had the Bomb been dropped. The command centre at Hack Green was originally constructed in 1952-4 as part of the ROTOR programme\(^{17}\), on land acquired by the RAF in the Second War and used as a radar station and decoy site to lure German bombers away from Crewe’s important railway infrastructure.

Hack Green’s design by the Ministry of Works was based on the R6 bunker template\(^{18}\) : a large 50.6 metre long rectangular block, two-storeys high and semi-sunken into the ground for protection. Built from reinforced concrete with 600mm thick outer walls which were designed to resist the effects of a 5 kiloton nuclear explosion; there were no windows and the only openings in the structure were at each end of the ground floor and were protected by heavy blast doors and lobbies. The roof was a flat concrete slab with an overhanging parapet.

The R6 bunker underwent internal refurbishments as it was put to different uses, including its role in the late 1950s and through the 1960s as a joint civilian / military air traffic control centre for the north of England. For about a decade it was abandoned before being acquired by the Home Office in the late 1970s and completely gutted internally to be fitted out as a RGHQ at a cost of some £22m. This included the addition of a 10.2m long generator room on the western elevation. The bunker was operational from 1984, although never activated; the notional allocation of room spaces for RGHQ is shown on the floor plans and it is evident that the majority of space was required for stores, plant and communications equipment and services.

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\(^{17}\) This was a massively expensive scheme in the early 1950s to upgrade the UK’s radar defences to track fast jet bombers. Technologically advanced for the time it necessitated the construction of multiple command and control bunkers across the country. Cf. http://www.subbrit.org.uk/rsg/features/rotor/

\(^{18}\) Only five bunkers of this design were built: Langtoft, Lincolnshire; Treleaver, Cornwall; St Twynells, Pembrokeshire; Hope Cove Radar Station, near Salcombe, Devon. This last site was Listed Grade II (ref. 1427493) in 2015.
Following the collapse of Soviet Union in 1991, there was no justification for maintaining Cold War government bunkers such as Hack Green and it was sold off. The private owner subsequently opened the bunker as a public museum in 1998 displaying all manner of artefacts related to nuclear weapons, early warning systems and how government personnel would try to survive after the end of the world.

Figure 4: Exterior view of the Hack Green nuclear bunker, circa. 2012. The element to the left is the 1980s ground-level addition to the 1950s R6 ROTOR bunker housing backup generators and a new entrance. The grey steel plates are baffles to protect the air intakes from debris. The radio antenna is from the 1980s but has recent additions for mobile phone communication. Source: Courtesy of Richard Brook.
Figure 6: Diagrammatic map estimating the devastating effects of multiple nuclear blasts on Greater Manchester. Source: *Emergency Planning and Nuclear War in Greater Manchester* (MUND Manchester University Staff Nuclear Disarmament Group and Greater Manchester Council, circa. 1983).