



Cold war urbanism - the challenge of survivable city infrastructure

Document Version

Accepted author manuscript

[Link to publication record in Manchester Research Explorer](#)

Citation for published version (APA):

Dodge, M., & Brook, R. (2015). Cold war urbanism - the challenge of survivable city infrastructure. In *International Conference of Historical Geographers 2015* (pp. 1-32)

Published in:

International Conference of Historical Geographers 2015

Citing this paper

Please note that where the full-text provided on Manchester Research Explorer is the Author Accepted Manuscript or Proof version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version.

General rights

Copyright and moral rights for the publications made accessible in the Research Explorer are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

Takedown policy

If you believe that this document breaches copyright please refer to the University of Manchester's Takedown Procedures [<http://man.ac.uk/04Y6Bo>] or contact uml.scholarlycommunications@manchester.ac.uk providing relevant details, so we can investigate your claim.



International Conference of Historical Geographers 2015

5-10 July 2015, at the Royal Geographical Society (with IBG) in London, UK

Cold war urbanism - the challenge of survivable city infrastructure

Department of Geography, University of Manchester m.dodge@manchester.ac.uk

Richard Brook, Manchester School of Architecture r.brook@manchester.ac.uk

Abstract

In this paper we wish to explore how the threat of nuclear war in the 1950s and '60s affected planning at a range of geographic scales. Discussion is focused on the role of survivable infrastructure design and planning in the face of atomic weapons in the 1950s. National and international telecommunications networks were built during this time as a direct response to global political conditions. The rise of atomic power and computational technologies required new facilities that were often dispersed and situated variously for secrecy and locally available expertise/experience. The zoning of land and organisation of facilities and the planning towns is not conventionally viewed as informed by processes of the 'warfare state' (Edgerton, 2005), but we want to ask; What were the patterns of the built environment, economic structures and aesthetics / cultures of Cold War urbanism in Britain? As Boyd and Linehan (2013) state in the introduction to their recent book *Ordnance: War + Architecture & Space*, we needed to be alert to 'escalation in the intersections between the fabric of the landscape and the technologies of war and the extrusion and mutation of war from the battlefield into everyday life'. We seek papers drawing on a range of different evidential bases, archival research, personal histories and lived experiences and theoretical ideas to understand the spatiality of technological development, primarily focused upon city scales and architectural resultants.

Thurs	Timeslot 1	Timeslot 2	Lunch	Timeslot 3	Plenary	Evening
	09:15 – 11:00	11:30 – 13:15	13:15 – 14:15	14:15 – 16:00	16:30 – 18:00	18:00 – 19:30

19. Sessions – Thursday 9 July

82		Asylum geographies (1)
Th1 RGS-OT		Related sessions: 94 View abstracts online: http://conference.rgs.org/ICHG/82
Convenors		Cheryl McGeachan, Chris Philo (University of Glasgow, UK)
Chair		Ebba Högström (Blekinge Institute of Technology, Sweden)
1	The Scottish Poor Law of Lunacy - Lauren Farquharson (University of Glasgow, UK)	
2	City of others: geographies of the cosmopolitan asylum - Caroline Bressey (University College London, UK)	
3	"It was decided that we'd start at the north of Scotland and work our way south ... so Craig Dunain was our first call": psychiatric art therapy and the emergence of the 'Art Extraordinary' collection in Scotland - Cheryl McGeachan (University of Glasgow, UK)	
4	"Lonely lost people living in the waste-land": T. Ferguson Rodger, "social psychiatry", "mad dreaming" and "rethinking mental health" - Sarah Phelan (University of Glasgow, UK)	

83		Historical geographies of making (1): practice, process and experience
Th1 RGS-EC		Related sessions: 95 View abstracts online: http://conference.rgs.org/ICHG/83
Convenors and Chairs		Nicola Thomas (University of Exeter, UK), Kevin Milburn (University of Hull, UK)
1	Historical geographies of apprenticeship: tracing the 'passing-on' of a craft-style - Merie Patchett (University of Bristol, UK)	
2	Historical geographies of craft production: finding makers lives and skilled labour in the archives - Nicola Thomas (University of Exeter, UK)	
3	Sacred stitching: intersections of domesticity, femininity and religious labour in the making of the interwar suburban church - Claire Dwyer (University College London, UK)	
4	The art and afterlife of Tom Thomson: painting wilderness, making a country? - Kevin Milburn (University of Hull, UK)	

84		Cold war urbanism: strategic plans, secure structures and technocratic politics (1)
Th1 RGS-CR		Related sessions: 96 View abstracts online: http://conference.rgs.org/ICHG/84
Convenors		Richard Brook (Manchester School of Architecture, UK), Martin Dodge (University of Manchester, UK)
Chair		Richard Brook (Manchester School of Architecture, UK)
1	Cold war urbanism: the challenge of survivable city infrastructures - Martin Dodge (University of Manchester, UK)	

Map 1 BLAST

Cold War Urbanism The Challenge of Survivable City Infrastructure



Greater
Manchester
County

Martin Dodge

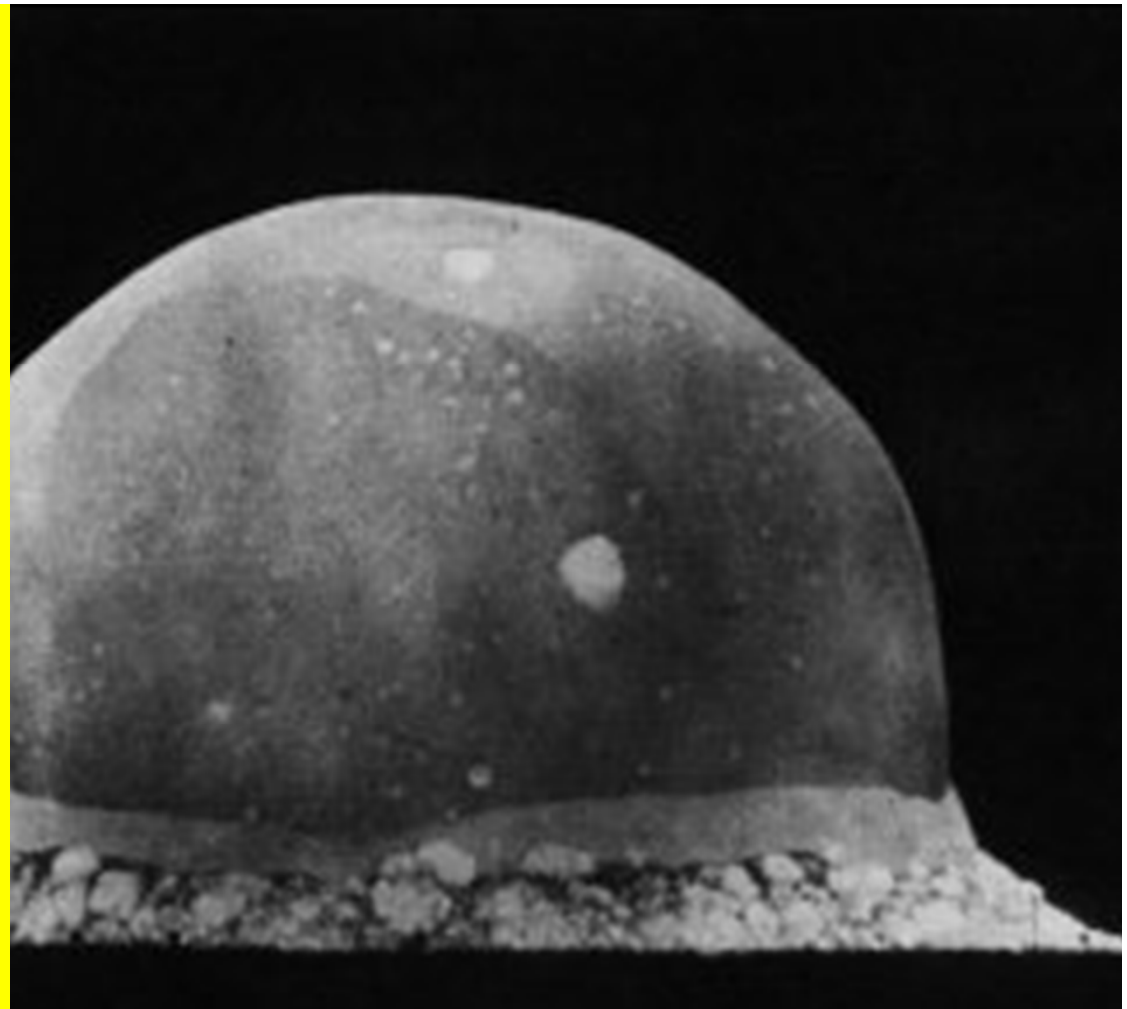
Geography | University of Manchester

Richard Brook

Manchester School of Architecture

International Conference of Historical Geographers 9 July 2015

- Post-war, atomic age Britain, but deep austerity and imperial decline
- 1949 shock of speed of Soviet atom bomb development
- 'Civil defence was about the preservation of Government (the State) and not about protecting the general populous'
- Essential national infrastructure
- Urban planning, architecture / design, structural engineering, the techno-scientific bureaucracies
- Speaking here, we might speculate on the role of geographers and the RGS.....



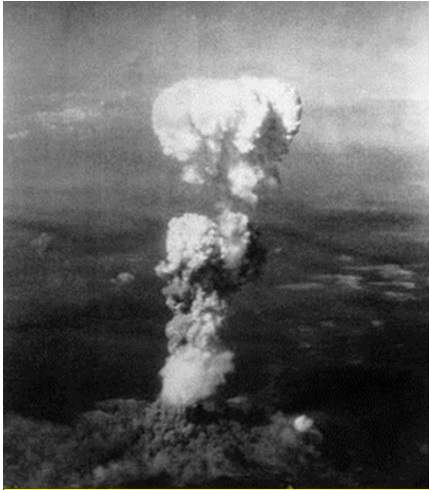
Cold War Context

100 METERS

SCIENCE
MUSEUM

CHURCHILL'S
SCIENTISTS





Cold War Urbanism

Definitions

- What do we mean by urbanism? Summation of the forces shaping urban space and how people experience city life
- Yet as Henri Lefebvre notes:

Urbanism . . . masks a situation. It conceals operations. It blocks a view of the horizon, a path to urban knowledge and practice. It accompanies the decline of the spontaneous city and the historical urban core. It implies the intervention of power more than that of understanding. Its only coherence, its only logic, is that of the state – the void. The state can only separate, disperse, hollow out vast voids, the squares and avenues built in its own image – an image of force and restraint

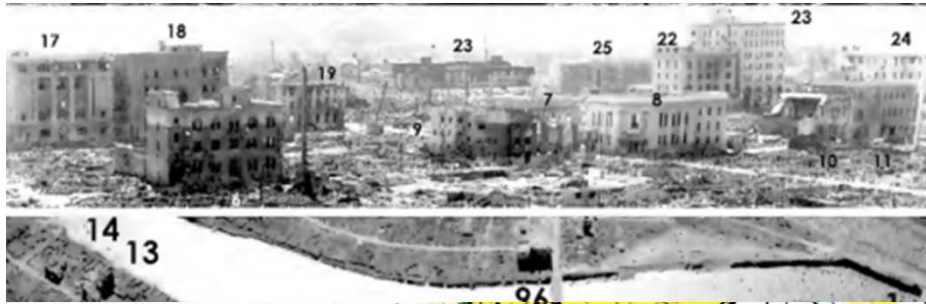
Lefebvre, H. (2003 [1970]) *The Urban Revolution*, trans. R. Bononno. Minneapolis: University of Minnesota Press. pp. 160–1

Cold War Urbanism

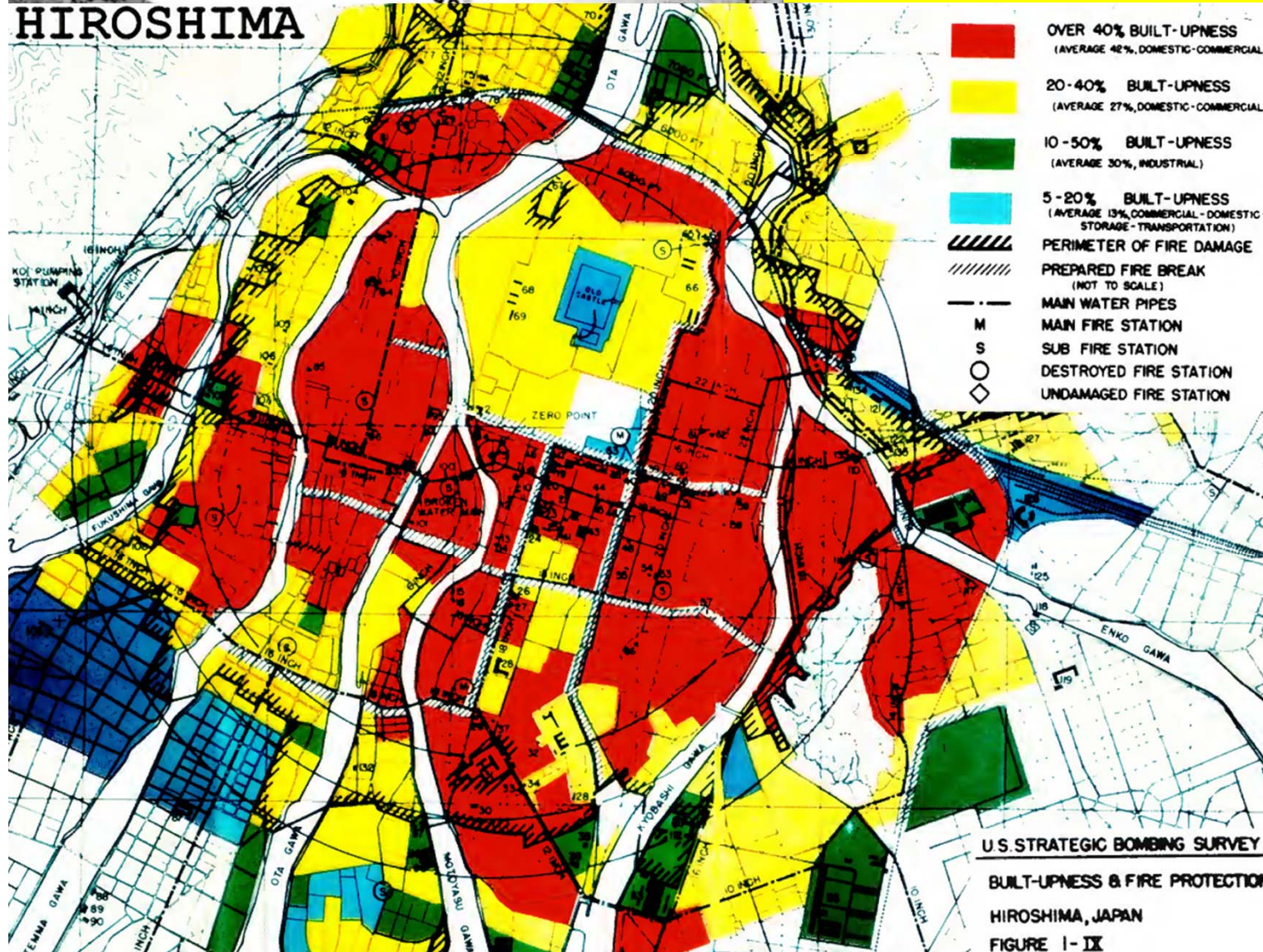
Definitions

- Urbanism in the 1950s and 60s as a military project
- The city the primary site of war
- Urban population and aerial bombing, the WWII blitz experiences, showed how vulnerable civilians were
- City centre target of single atom bomb (Hiroshima)
- Metropolitan wide megaton devastation of the thermonuclear weapon by late 1950s
- Nuclear war is about deterrence, which in turn is about planning for a survivable nation
- Cold war urbanism – imagining, designing, planning and building for the bomb and its aftermath

Spatio-architectural autopsy of dead city



HIROSHIMA



Cold War Urbanism

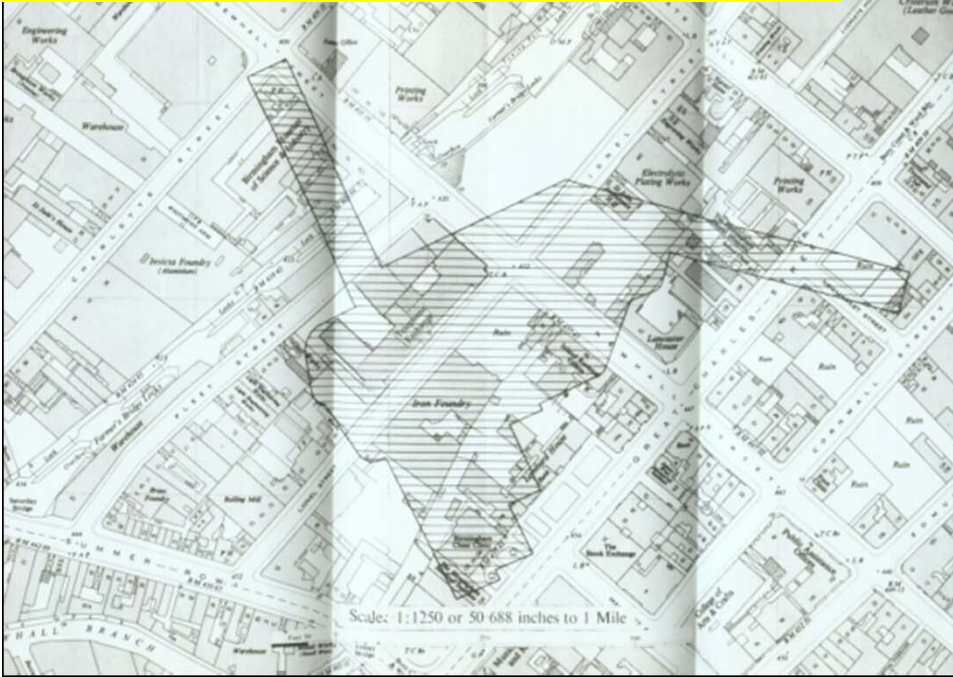
A research agenda

- Telling the technical histories
- Uncovering the logics, document discourse and plans; explaining the agenda of developments
- Mapping the spatial networks and operational space of physical infrastructure
- (In)visibility | hidden in plain sight
- Proposed, unrealised and unbuilt, e.g. shelters
- Co-opting civil infrastructural into service for strategic and military usage
- Industrial systems brought into being to produce strategic weapons
- Exploring and exposing the atomic imperative across many other registers: economic, legal, cultural, education, personal

The imperative of survivable communication

- Why did they build deep bunkers for telephone exchanges under several British city centres in 1950s?
- Hugely expensive, at a time of austerity
- Reference frame was WW2 blitz and recovery
- The inertia of installed infrastructure. Vital national networks physically converged on vulnerable city centres

Scheme 526 | Anchor

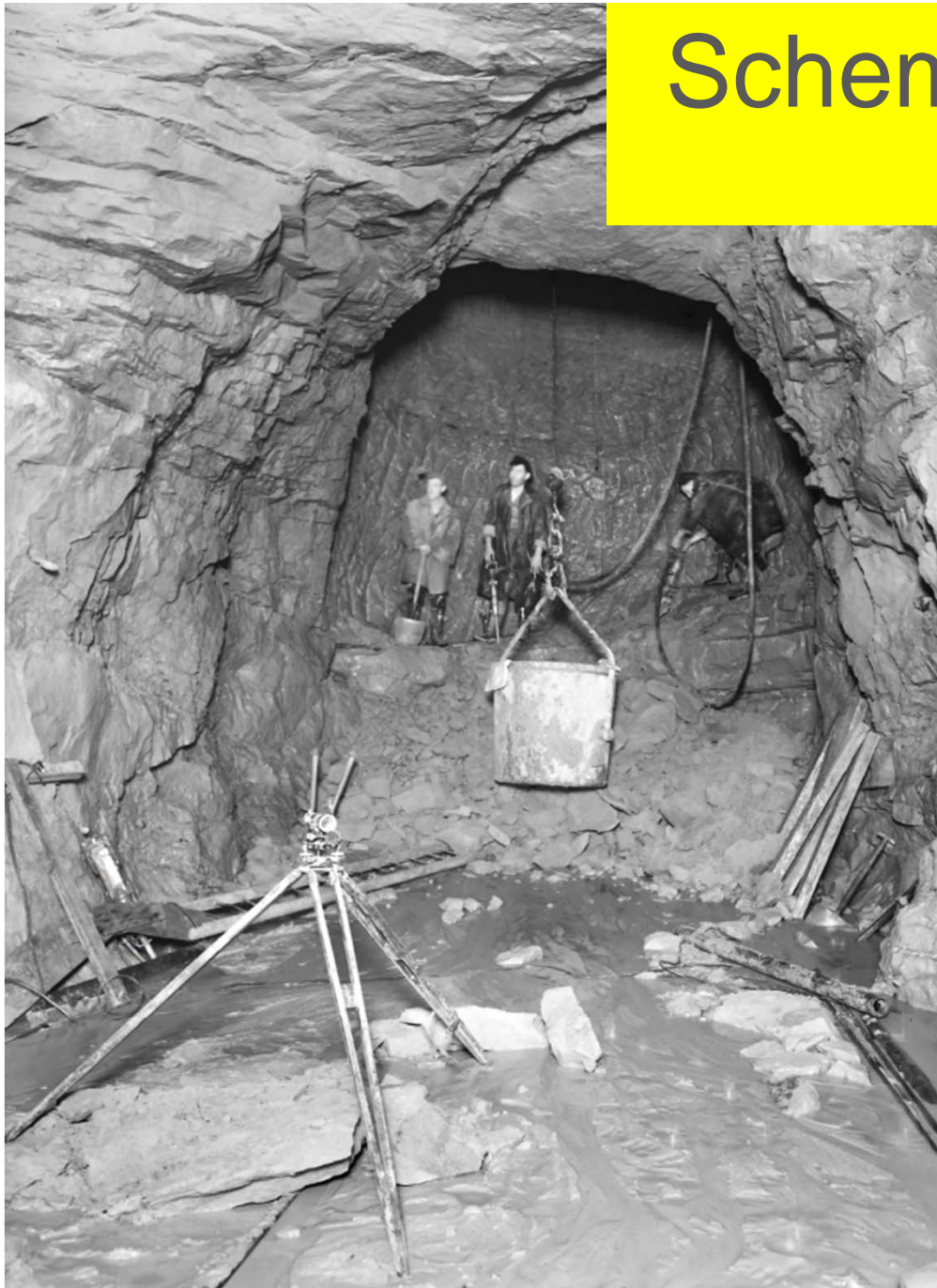


Scheme 2147 | Kingsway



Scheme 567 construction

a lot of effort expended



BT Archives TCB 417/E19882; E19982



BT Archives TCB 417/E20315



BT Archives TCB 417/E21572



BT Archives TCB 417 /E24044

Official secrecy

Hiding what?

TNA, CAB 21/3999

more and more people are reading 'Country Standard' Send 2/6 stamp for free sample to 27 Bedford Street, W.C.2

Daily Worker

THE ONLY DAILY PAPER OWNED BY ITS READERS

SATURDAY SEPTEMBER 8 1951

(6222) 2d *

SECRET ATOM SHELTER UNDER LONDON

For defence chiefs & 'high-ups' only

From FRANK GULLETT

SSOME 2,000 building workers are engaged on burrowing an extensive network of atom-bomb proof tunnels under London. Government departments are refusing to give any details of the project.

Stretching from Holborn to Westminster a mile away, these secret tunnels are designed not for London's population but for Cabinet Ministers, top Civil servants and "Defence Chiefs."

Given top priority for labour and materials, tunnelling is going on seven days a week, 24 hours a day. Workers have been carefully screened.

The main shaft is 25 feet wide of reinforced concrete and steel lining. Nearest vent to surface level is over 100 feet deep. John Mowlem Ltd. and Mitchell Bros., large civil engineering concerns, are engaged on the project.

Northern end of the network is at Holborn, where four shafts have been sunk. The tunnel here links with the old disused Holborn



In High Holborn a British Road Services lorry (picture above) from Stockton-on-Tees delivers sections of the steel

- Cloak of classified space
- Default of the State
- Hides waste and incompetence
- Klaus Fuchs and the Cambridge Spies – Soviets knew it all...

EXTRACT FROM 'DA
3RD SEPT

Secret tunnels dug for London

Express Staff Reporter

A SECRET network of tunnels is being built near London's High Holborn as a defence project.

The tunnelling started in March. Four 100ft. shafts have been sunk, and tunnels are being driven to connect the shafts. The work is on a three-year plan.

Workers on the job have been asked not to inquire into the purpose of the tunnels, and hoardings have been put up round the sites.

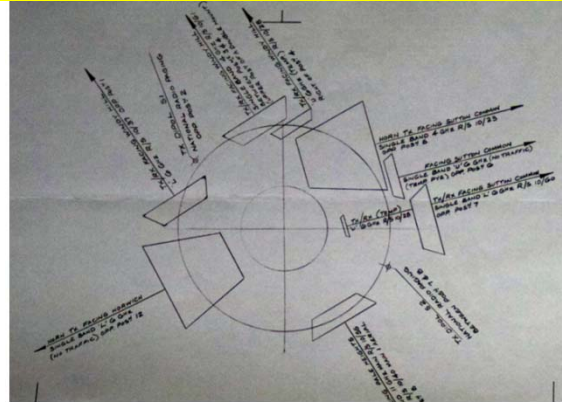
SHAFT No. 1 has been sunk in Furnival-street, a few yards from High Holborn.

And 120 men are working underground at this point, with tube trains running overhead.

An underground storeroom, used in wartime as a safe for

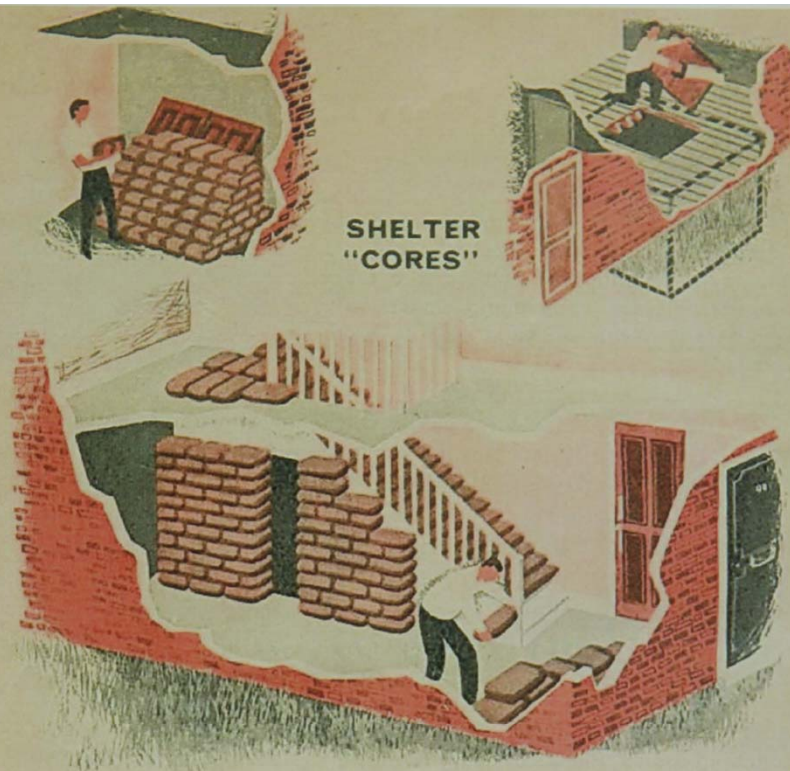


(In)visibility
 Hidden in plain sight



Saving people

The Shelter Question



Outdoor Fall-out Shelter

If it is impossible for you to prepare an indoor fall-out shelter, a trench dug outside your home would provide good protection. It should be deep enough to provide comfortable standing room and the sides should be shored up. After placing supports across the trench, cover the top with boards, metal sheets or concrete slabs, and heap earth on top. Leave a manhole-type entrance with a movable cover such as a dustbin lid. Keep a small ladder or a pair of household steps there.



Mr Chuter Ede [Home Secretary] making a statement on civil defence to House of Commons “...*It will not be possible to provide shelter on any significant scale without making heavy calls on labour and materials much needed for other purposes..*”

[Source: “Local surveys the first stage in air-raid shelter plans”, *Guardian*, 10 November 1950]

The circulation of this paper has been strictly limited. It is issued for the personal use of S. Normanbrook

TOP SECRET

Copy No. 32

C.P. (51) 19

18th January, 1951

CABINET

CIVIL DEFENCE PREPARATIONS

MEMORANDUM BY THE HOME SECRETARY

Warfare versus Welfare

Source: TNA | CAB 129/44

3. The following are the main projects provided for in the £137 million of Category I expenditure:—

- (a) Recruitment and training of volunteers for the Civil Defence Services.
- (b) Emergency feeding arrangements.
- (c) Telecommunications.
- (d) Civil defence war rooms.
- (e) A small amount of hospital building.
- (f) The civil warning system.
- (g) Production of new respirators for the general population.
- (h) Protected accommodation at Government buildings.
- (i) A beginning with arrangements to ensure the maintenance (or "due functioning") of essential services (railways, gas, electricity, &c.) in war.

As regards the remainder of the field, the programme makes no provision for anything except paper planning, and accordingly it would not provide for equipment for the enlarged Fire Service and other Civil Defence Services, for emergency water supplies, for shelter for the public or industry, for buildings for rest centres, for equipment for hospitals, the homeless and evacuees, or for black-out; and the provision made for hospital building and for the maintenance of essential services is too small to have any great significance.

The City Engineer in Manchester diligently conducted a survey ...

PUBLIC BASEMENT SHELTERS,

Page 3.

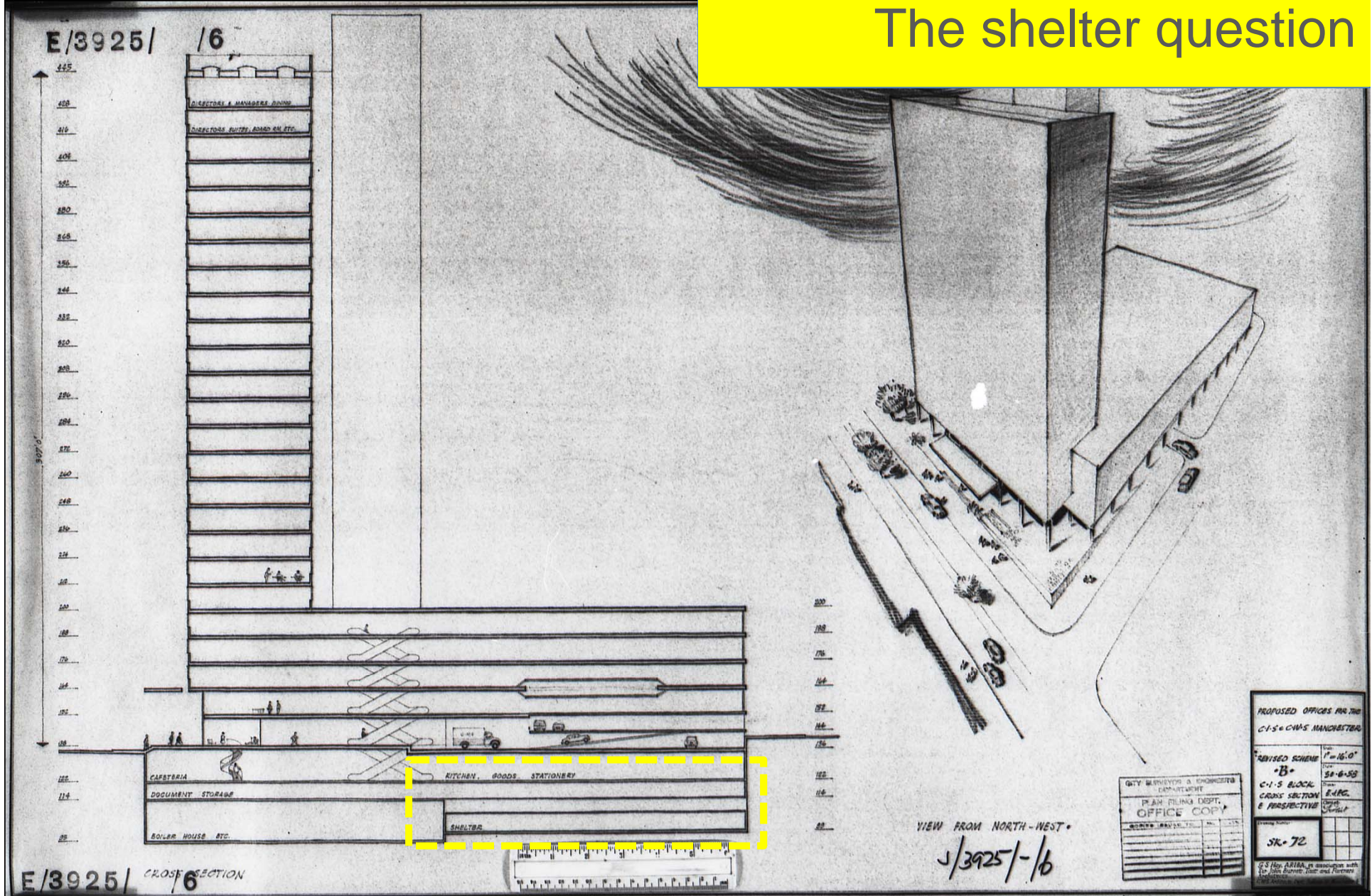
IN STEEL FRAMED & REINFORCED CONCRETE BUILDINGS.

Shelter No.	Position.	Ord. Sheet.	Capacity of Shelter.	Remarks.
134.	Piccadilly & Oldham St., (Woolworths), City.	CIV-6	165.	
108.	11 Piccadilly, (Littlewoods) City.	CIV-6.	300.	
106.	23 High St., City. (Shevloff Ltd.)	CIV-6.		
98.	47 Corporation St., City. (Van den Berghs).	CIV-6.	190.	Has sub-basement below sewer level.
169.	Corner of Gateaton St. & Victoria St., City.	CIV-6.	200.	
512.	Bridson St., Strangeways, (Boddington Brewery).	CIV-6.	200.	New Portion.
729.	Kendal Milnes, Deansgate.	CIV-6.		
609.	Gt. Ducie St., (J. Cockshott & Co.)	CIV-6.	200.	

... and then little or nothing seemed to happen regarding shelters

Corporate Space

The shelter question





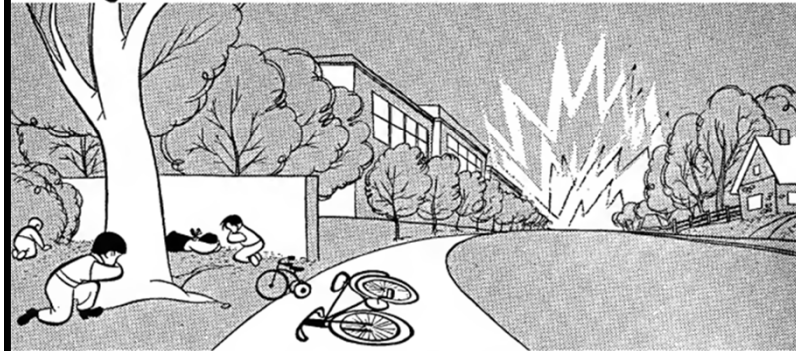
BERT the TURTLE *

says

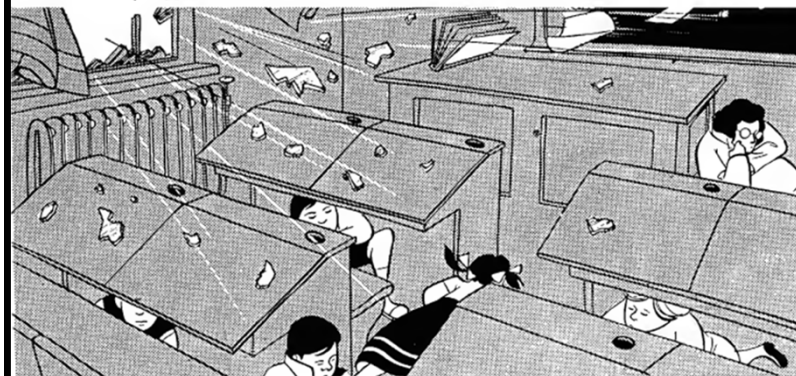
DUCK and COVER

* STAR OF THE OFFICIAL U.S. CIVIL DEFENSE FILM "DUCK AND COVER"

FEDERAL  CIVIL DEFENSE ADMINISTRATION



SO, LIKE BERT, YOU **DUCK** TO AVOID THE THINGS FLYING THROUGH THE AIR...



Public information

Propaganda and social space



ATOMIC BOMB THREAT

IT'LL NEVER HAPPEN.





WHAT'S THE USE.

THERE ISN'T ANY.

CIVIL DEFENCE

IF YOU THINK IT'S HOPELESS, YOU'RE WRONG

Civil Defence Recruiting Drives are going on now, all over the country. Their object is to tell you all about Civil Defence — what it can do, what it IS doing and what there is in it for you.

Welfare Section Rescue Section Auxiliary Fire Service

CIVIL DEFENCE is common sense

Go to your Council Offices and ask, today. They will be glad to see you.

ISSUED FOR H.M. GOVERNMENT BY THE CENTRAL OFFICE OF INFORMATION

Cold War construction

Civil engineering and architectural aesthetics



47 kt Greenhouse
Easy, Eniwetok
Atoll, 1951. Brick
house, 3 psi peak
overpressure



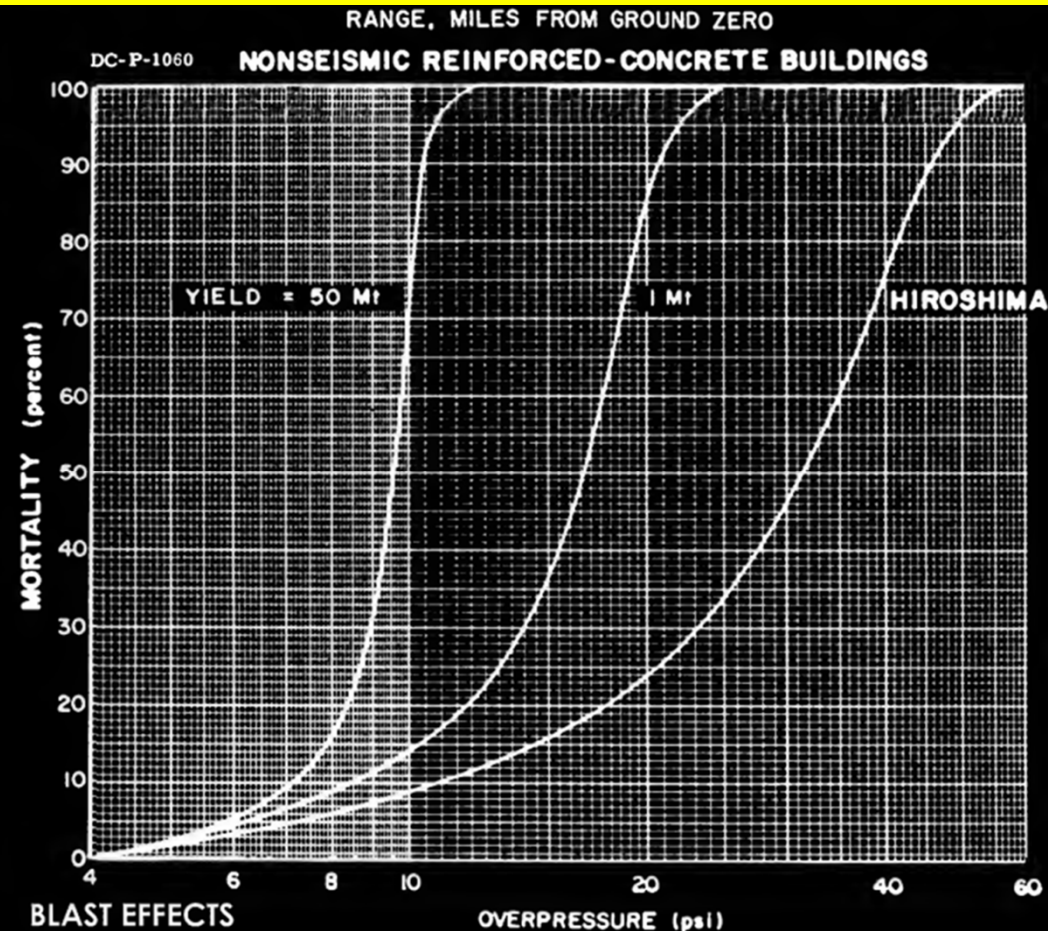
0.6 second



Impact + 1.0 second



Afterward



- Aesthetics were engineering and camouflage driven
- Blast tests called to question the reality of man-made structures surviving detonation

Cold War construction

Civil engineering and architectural aesthetics



- BT Tower
- Kelvedon Hatch

Situating the military-industrial complex

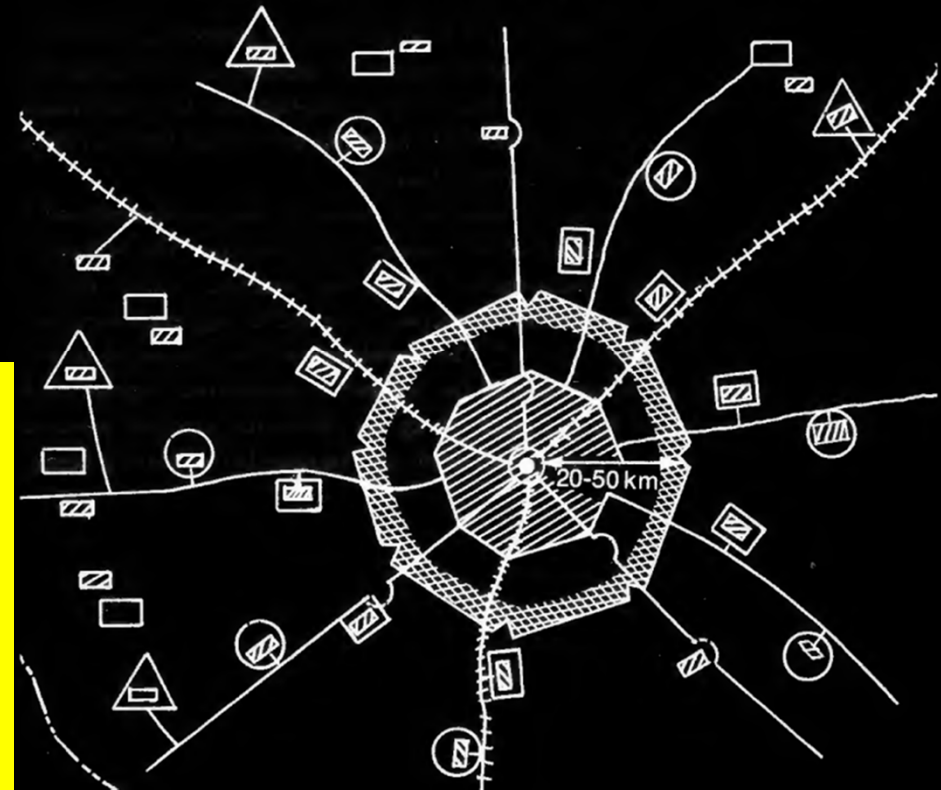


- Economic drivers of Cold War urbanism evident in strategic projects that required specialised facilities for research, testing and industrial production
- Computer cluster in Manchester
- There is a need to understand spatial position, flow of material and architectural forms | Was it planned, or opportunistic on the part of technology manufacturers?
- The role of the computation and the computer in relation to military objectives and civil applications – industry too was hidden in plain sight

Planning for the 'End of the World'

Dispersing the city

CHART 4—Schematic Diagram of the Relocation of Dispersed Workers and Evacuated Persons and Plants.



- How far did 'doomsday' scenarios and metrics of nuclear destruction come to influence strategic planning of cities?
- Was planning philosophy and modern land-use practice driven by dystopian avoidance?
- Expolis, suburban sprawl and multi-lane expressways, car-based consumerism, edge development, economic dispersal, lower residential densities

Image references:

- *Slide 1:* Diagrammatic map of the effects of nuclear blasts on Greater Manchester from 'Emergency Planning and Nuclear War in Greater Manchester', booklet published by MUND Manchester University Staff Nuclear Disarmament Group and Greater Manchester Council, circa. 1983.
- *Slide 2:* Photograph of the Trinity atomic test, 16 July 1945. Source: <http://www.atomicarchive.com/Photos/Trinity/image7.shtml>
- *Slide 3:* Promotional illustration for 2015 exhibition *Churchill's Scientists* at the Science Museum in London. Source: http://www.sciencemuseum.org.uk/visitmuseum/Plan_your_visit/exhibitions/churchills-scientists.aspx
- *Slide 4:* View of the mushroom cloud above Hiroshima after the atomic bomb on 6 August 1945. Photograph taken by crew of the Enola Gay. Source: <http://www.atomicarchive.com/Photos/Hiroshima/image1.shtml>
- *Slide 6:* Hiroshima bomb survey map and damage photographs from *The Effects of the Atomic Bomb on Hiroshima, Japan*, U.S. Strategic Bombing Survey, Report 92, May 1947. Source: Cook N B, 2013, <https://archive.org/details/TheEffectsOfTheAtomicBombOnHiroshima>
- *Slide 8:* View of racks of telecommunications equipment being installed in the top half of the main Apparatus Tunnel 8 of the Guardian underground telephone exchange in Manchester, April 1958. Source: tunnel engineer Patrick Gough, courtesy of George Coney.

- *Slide 9:* Left, safeguarding maps showing the approximate extents of the 1950s era underground telephone exchanges built in central Birmingham (Scheme 526, Anchor) and in central London (Scheme 2147, Kingsway). Source: BT Archives, ref. POST 122/1049.
- Right, map of 'Coaxial Cable Systems in Great Britain 1946', edited and annotated by author. Source: Keith Ward, 2006, "A short history of telecommunications transmission in the UK", *The Journal of The Communications Network*, 5(1).
- *Slide 10:* Photographs documenting tunnel construction for the Guardian underground telephone exchange (Scheme 567) in Manchester, January and February 1955. Source: BT Archive, ref. TCB 417/E19882; E19982.
- *Slide 11:* Photograph documenting tunnel construction for the Guardian underground telephone exchange (Scheme 567) in Manchester, 1955. Source: BT Archive, ref. TCB 417/E20315.
- *Slide 12:* View along the main apparatus tunnel prior to equipment installation in the Guardian underground telephone exchange (Scheme 567) in Manchester, 1956. Source: BT Archive, ref. TCB 417/E21572.
- *Slide 13:* View of backup electrical generation equipment installed the Guardian underground telephone exchange (Scheme 567) in Manchester, 1959. Source: BT Archive, ref. TCB 417/E24044.
- *Slide 14:* Newspaper clipping included in Cabinet files discussing the secrecy of the construction of the Post Office tunnels. Source: National Archives, CAB21/3999.

- *Slide 15:* Map 'Backbone & Standby Radio Links' from GPO briefing paper to the Cabinet, July 1956. Source National Archives, CAB 134/1207.
- Photograph of the Heaton Park microwave tower. Source: BT Archive, ref. TCB 417/E33223.
- *Slide 16:* Page from 'Advising the Householder on Protection Against Nuclear Attack', Civil Defence Handbook No. 10, 1963.
- *Slide 17:* Extract from Cabinet briefing paper 'Civil Defence Preparation', 18 January 1951. Source: National Archives, ref. CAB 129/44.
- *Slide 18:* Extract from survey list 'Public basement shelters in steel framed & reinforced concrete buildings', 1951. Source: Manchester City Archives, ref. miscellaneous Wood Street material Box 7 2012/33
- *Slide 19:* Architectural section of the CIS tower building, Manchester, 1958. Source: author scan from City Engineers microcard, ref. 3925/_/6, Courtesy of Manchester City Archives.
- *Slide 20:* Extract from architectural section of the CIS tower building showing the location of basement shelter. Source: author scan from City Engineers microcard, ref. 3925/_/6, Courtesy of Manchester City Archives.
- *Slide 21:* Left, 'Duck and Cover' cartoon by US civil defense. Source: Cook N B, 2013, Air Raids Handbook, p. 346, <http://archive.org/details/AirRaids>
- Right, author edited extract from British civil defence poster, 'If you think it's hopeless, you're wrong', cartoon by Leslie Illingworth, 1957. Source: National Archives, ref. INF 2/122.

- *Slide 22*: Photograph sequence, '47 kt Greenhouse Easy, Entwetok Atoll, 1951. Brick house, 3 psi peak overpressure', Source: Cook N B, 2013, Air Raids Handbook, p. 296, <http://archive.org/details/AirRaids>
- Chart 'Nonseismic Reinforced-concrete Building' taken from Wayne Davis L, et al, 1966?, *Prediction of Urban Casualties and the Medical Load from a High-Yield Nuclear Burst*, (Dikewood Corporation, DC-FR-1060). Source: Cook N B, 2013, Air Raids Handbook, p. 249, <http://archive.org/details/AirRaids>
- *Slide 23*: Left, photograph of BT Tower in London, date not know. Source: unrecorded online source.
- Right, photograph of the innocuous surface building masking the entrance to the Kelvedon Hatch underground military bunker, 2007. Source: Genesisman26, https://en.wikipedia.org/wiki/Kelvedon_Hatch_Secret_Nuclear_Bunker
- *Slide 24*: Photograph of the entrance gatehouse to the Ferranti factory in Wythenshawe Manchester, 1955. Source: author scan from original in the Cruikshank and Seward archive, courtesy of Fairhurst Design Group.
- *Slide 25*: 'Chart 4 - Schematic diagram of the relocation of dispersed workers and evacuated persons and plants', from a 1969 Soviet book, *Civil Defense ('Grazhdanskaya Oborona')*, translated by Oak Ridge National Laboratory (ORNL-tr-2306, April 1971). Source: Cook N B, 2014, War Plan UK, p. 248, <https://archive.org/details/WarPlanUK>