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Architects and the Atomic Age
The Atomic Energy Commission and the debate on urban dispersion

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Abstract

At the dawn of the atomic age the US architectural scene was shocked to the awe and devastation brought by the atomic bomb and was quick to adapt it thinking on city planning. As early as December 1945, Alfred Caldwell was proclaiming in a feature article of the Journal of American Institute of Architects: "Now we have a weapon that makes cities the most dangerous place in the world." For Caldwell, as well as Hilberseimer and a growing group of advocates, decentralization was the only rational solution to civil defence in the wake of the US bombings at Hiroshima and Nagasaki. In the following years, this direction for dispersed urbanism was propagated by the mass architectural media of the time and institutionalized through workings between the American Institute of Architects and the US Atomic Energy Commission of 1946, the gubernatorial agency for the promotion and regulation of atomic energy to all facets of US industry. But a counter-argument to urban dispersion was also harbouring among the architectural community, namely by architects such as Josep Lluis Sert, who having taken the lessons of the US CIAM to his heart stood in defense of central city areas and "the historical pattern of towns." This paper traces the history of this debate on urban dispersion and investigates the connections between administrative, academic, media, and professional bodies that interconnected and conditioned the architectural matters of the time.

Keywords

Atomic Energy Commision, American Institute of Architects, US Modernism, Josep Luis Sert, Elisabeth Kendall Thompson

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1. INTRODUCTION

The phenomenon of urban dispersion in post-world war II USA, and the popularization of low density community planning was a direct result of civil defence planning choices and directives against the possibility of atomic warfare. In fact, the convergence and correlation of planning and civil defence in the context of post-world war II US planning has been already documented (shortly but sufficiently)[1]. There is however a third phenomenon coinciding that is here being added to the discussion and gains the focus of particular interest: the institutionalization of the architectural and planning professions that was at the time in its final phase of completion. The basic premise of this article is that the history of this particular architectural debate showcases the systematization of new institutions as the main channels for architectural discourse and as intermediaries between the profession, the government, and the general public. As such, this paper explores the debate on urban dispersion at the outcome of WWII by individual architects and planners[2] for or against urban dispersion as well as formal directives from the government's own Atomic Energy Committee supported by the American Institute of Architects and major architectural periodicals. An underlying narrative here is crystallization of architectural discourse from an exchange of individuals' proposals and argumentations to a more formulated mode conditioned by professional organizations, media, and the specialized governmental agencies.

2. FIRST VOICES IN REACTION TO ATOMIC WARFARE

2.1. *THE NEW CITY*, 1944 BY HILBERSEIMER ET AL.

The first voice amongst architectural circles of mid-century US with regards to the relation between atomic warfare and urban planning was a pre-emptive reaction from the German emigrant Ludwig Hilberseimer in his project for the "New City" developed through the intra-war years and published in 1944 in book form.[3] There he explored principles of urban planning amongst which decentralization played a pivotal role. His schemes present a concept of a decentralized city in a liner web structure in different scales: from the unit of L-formed houses, blocks and superblocks, cell settlements, to the regional and national level. From one part, decentralization both in terms of planning as well as its accompanying theory of principles and analyses provide a functional problem-solving consideration to the problem of industrialized modern metropolises in terms of: traffic and infrastructure, geological determinates, ecological potentials, crime, smoke pollution and other health factors. [4]

Among these issues the problem of civil defense emerges in a modest but prevalent way: "When firearms were invented, protection of the city confined within its walls became difficult. As firearms were perfected, those walls had to be replaced by forts outside the city. The city area was thereby increased. Modern aerial warfare has made all city concentrations dangerous. Protection in the future must be accomplished by disurbanization and dispersal."[5] And that: "Security can only be achieved by the combination of city dispersion and a high de-

gree of self-sustainable regions able to provide for the needs of their people in war or peace." Arguably, this project can be seen as a continuation of earlier projects at least since 1929 and the *Groszstadtarchitektur* book. However, it gains particular interest since Hilberseimer had been lecturing on "Cities and Defense" to the Chicago Chapter of the AIA since 1941 and was commissioned to curate an exhibition for the post-war future of US cities at the Art Institute of Chicago under the title "The City: Organism & Artifact which opened in October 1944.[6] With the publication of *The New City* emerging in tandem with the exhibition. In the introduction to a subsequent publication, Hilberseimer mentions that the passage on Civil Defense of *The New City* was reworked after the effects of the atomic bomb were published and mentions that the "requirements of military defense may become the deciding factor" in achieving the aims of his decentralized ideal.[7]

Foremost, Hilerseimer's approach remained one of economic determinism in between Fordism and socialist utopia in an effort to portray social order as planning order with any consideration of atomic warfare being one of secondary importance.[8] As Hilberseimer writes: "the low density of the new settlement, its decentralization and openness, and its close connection with the landscape dissolve the distinction between city and landscape. As this distinction fades, there comes into being, not only a framework for a better life, but also a sound pattern for the protection of the population against the destructive forces of aerial warfare.[9] The manner of expression of these first instances of planning discourse by Hilberseimer remained one of sobriety and technical minding distanced from the direct calls for action by the profession of the latter years, but certainly is the main precedent that opened the discourse on the topic of cities and warfare in the atomic age.

2.2. *ATOMIC BOMBS AND CITY PLANNING*, 1945 BY ALFRED CALDWELL

A second reaction in a more direct and in a way more official manner came from Alfred Caldwell in 1945. According to his own account Caldwell read the news of the Hiroshima bombing in the immediate aftermath and communicated with Hilberseimer[10], his mentor and associate at the time: "the world is ruined. I came home and wrote a paper".[11] His article "Atomic Bombs and City Planning" was published in the December issue of the Journal of the American Institute of Architects and as the title suggests advocated for the topic of atomic warfare as a primary concern for city planning. While missing the methodical and intricate proposals of Hilberseimer, Caldwell brought alarming urgency on the table positioning architects and planners to the frontline of atomic warfare: "atomic bombs and concentrated city centres cannot coexist in the same world. Something terrible and new has been added, and cities must be changed. From today on our city, and every large city, can be completely destroyed in a moment."[12] And: "plainly the city, once a place of refuge in times of war, has now become the very place of greatest danger. Naturally, we must do something. To be sure, we can do our best to keep the peace. Still if war comes, there is one defense and probably only one. During the years of peace we could disperse our cities and decentralize our industries."[13] But what is most characteristic of Caldwell's article is the level of sentimentality that was rarely seen in professional magazines, and which also showed the potential that the topic had for AIA's public relations.[14]

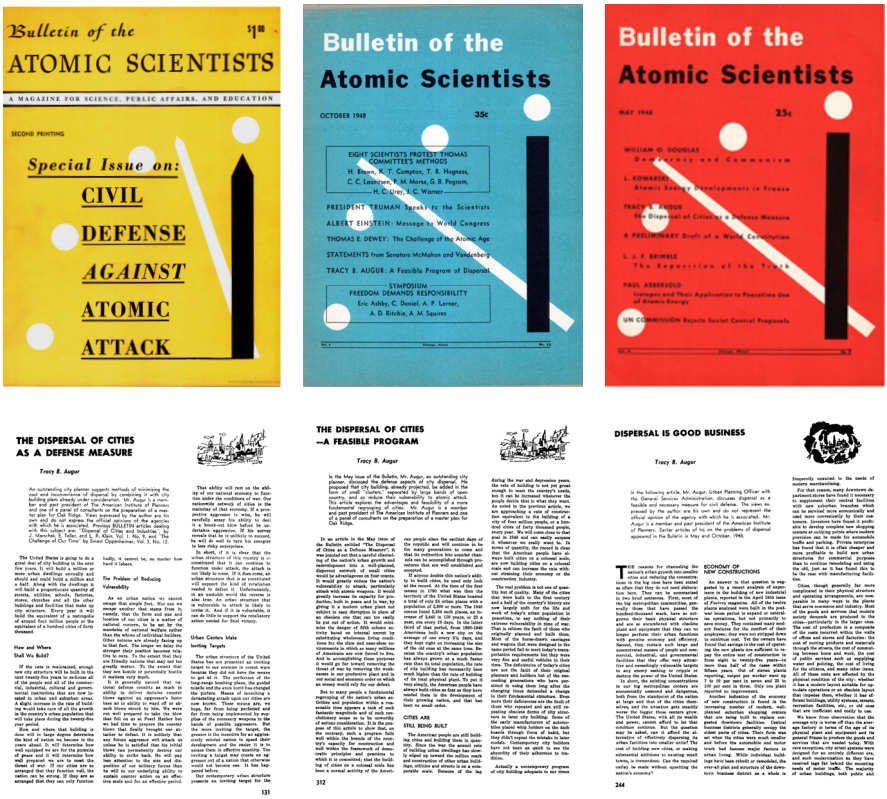

Fig. 1. Tracy B. Augur's 1948 and 1950 articles on urban dispersion at the *Bulletin of the Atomic Scientists* that posited the architectural discourse in a scientiffic and technocratic context and indicated the transitoin from the issue of civil defenes to that of economic and industrial development.

Headlining the cover of the JAIA, Caldwell's article brought the discourse from the academic to the professional level and signalled the intense interest that the AIA developed on the topic, and its gradual position in proximity to the AEC in the short future.

2.3. *DISPERSAL* ARTICLES BY TRACY B. AUGUR, 1948-1950

The distillation of a robust civil defense rationale came with Tracy Augur's article "The Dispersal of Cities as a Defense Measure" that was published concurrently at the *Bulletin of Atomic Scientists* and the *Journal of the American Institute of* Planners in May and July 1948 respectively. Augur himself, a past president of the American Institute of Planners, signaled the standing of architects and planners as experts on the scene of atomic energy. Equal to that of physicists and chemists.[15] In Augur's article peace is in essence introduced as an issue of function and economics of city planning on a national scale: "[Building construction] will determine how well equipped we are for the pursuits of peace and it will determine how well prepared we are to meet the threat of war." [16] Urban dispersion is offered as a strategy for national economy

to function under the conditions of war. The problem is then broken down in terms of target vulnerability and enemy penetration, as well as slum clearance and avoidance of unrest and "internal enemies". Efficiency of economic and industrial activities, expenses, transportation and communication, convenience, pleasantness and "wholesome living" are all brough together in a new image of consumer society as a merging of economy and technocratic planning. The issue of civil defense here is added to the mix of problems of housing shortage, slum clearance, and urban renewal as the argument that is in principle unrejectable and affirms the absolute and urgent turn towards urban dispersion.

The redesigning and rebuilding of whole cities into clusters of well dispersed small cities[17] is for Augur beneficial for all aspects of national economy under the adages of "Strong for war, strong for peace" and "dispersal will pay for itself". As the title of his consecutive article in the Bulletin suggests "Dispersal is Good for Business". The trajectory of this article series also showcases the relation of architectural and planning discourse as useful advocate for political and economic activity. As the expertise agency weighing in on a reconstruction project of national proportions.[18]

If Hilberseimer brought an early warning showcasing the value of in-depth planning, and Caldwell added an alarming relevance as well as sensational communicative prowess, Augur added legitimacy to the proposals of the architectural and planning professions. More importantly, Augur occupied a niche position for the built-environment professionals: that of mediating between politics and economy. This particular aspect of mediation would be further systematized with the founding of the Atomic Energy Commission and its relation with the AIA.

3. ATOMIC ENERGY AND THE PROFESSION

Since the late 1940s this debate on atomic energy expanded further and deeper than urban dispersion into specifics about construction materials, school planning, proper way of obtaining contracts for buildings specialized to withstand atomic blasts etc. More importantly, through the intense involvement of architects into this new field of knowledge and specifically to the Atomic Energy Commission, its ways of operating with the government, as well as its main institution of the AIA was systematized and rendered concrete. Further debates on architectural or planning topics would be conditioned by the institutional representatives and professional media rather than individual/heroic architects and planners.[19]

3.1. "CIVILIAN RATHER THAN MILITARY": THE ATOMIC ENERGY COMMISSION

The United States Atomic Energy Commission, established in 1946 by President Harry S. Truman, became overnight the responsible agency for the development of regulations and directives regarding atomic energy in all industrial fields. Urban planning and architecture included. As the Atomic Energy Act ruled, the Commission was to become a governmental branch reaching out to commerce, industries, and the greater public for the dissemination of the benefits of atomic energy from "civilian rather than military" hands. Until 1977 when it

was dissolved, the Commission reported annually to the US Congress technological and otherwise developments that it undertook, not only with regards to nuclear weapon development and nuclear power management, but also to "improve public welfare and strengthen free competition in private enterprise". In all, the Commission was in charge of envisioning the new era brought by Atomic Energy and while informative, it was also increasingly regulatory in virtually all industrial and professional fields. From the public record of the AEC reports it becomes apparent that architects and planners were brought under the scope of the agency from early on in the process.

3.2. CIVIL DEFENSE AND PUBLIC RELATIONS: THE AIA AT THE AEC

The first mentioning of architects in the AEC reports comes from the Eleventh Semiannual report of 1951. There the executive director of the AIA Edmund R. Purves is listed as member of the Advisory Board of Contract Appeals in order to counsel on contracts and subcontracts and to make recommendations to the General Manager alongside business academics and law officials.[20] By his own account Purves' experience at the AEC was both humbling as well as interesting in the sense that it showed that a new age had come, where the scientific aspects of architecture were being redefined: "Strangely enough my relation with science in architecture has far more to do with the law than with technological advance or scientific experimentation. [...] The agenda consisted of an opening statement by the attorney for the complainant, opening statement by the Government Counsel, direct examination, re-direct examination, re-cross examination, questions by panel members and summing up." [21]

In this technocratic/bureaucratic setting, Purves witnessed architecture's potential:

" time and time again in those hearings I have heard the attorneys say, when the architects' documents were put on the table, "This is the way the architect said it is to be done" and that would end the argument. Such statements were never refuted, possible due to the fact that there happened to be an architect, myself, sitting on the Board."[22]

A second top AIA-official to be mentioned as a regular member in the AEC reports is Frederic A. Pawley, research secretary and technical editor of the AIA Journal. Pawley[23] made part of the Advisory Committee on Industrial Information of 1952 whose aim was to "advise the AEC on disseminating unclassified technological information to industry." From this, a more robust program was defined titled "Technical Information Services" whose primary purpose was to externalize this knowledge.[24] Other than individual mentioning (apart from architects involved in AEC construction activities), architects are mentioned as the target audience of a training/educational program in 1952.[25] Its brief description mentions that: "while considerable information in this field is readily declassifiable, there remains the problem of collecting, organizing, and disseminating the data. The American Institute of Architects has formed a Committee on Architecture in Nuclear Science, addressed to this task, which is collecting information from all sources."

Following the establishment of the AEC (and later the Office of Civil Defense[26]) and the systematic involvement of the AIA, the latter years saw a frequent organization of conferences,

training programs, competitions,[27] and public addresses on topics of atomic energy and their importance to architecture and planning that were simultaneously picked up and commented upon by the national architectural periodicals.

4. "DEBATE" ON ATOMIC ENERGY AND URBAN DISPERSION

At the turn of the 1950s with the first atomic tests performed by the Soviet Union (August 29, 1949) and the start of the Korean war in June 1950, the discussion around atomic warfare became more and more intense. The discussion on urban dispersion became a regular topic in media of architects and planners. While essentially echoing ideas already well-established, the work of these editors did much to amass greater interest around the topic in what may have been a result of the AEC's "informational service" expanded program.

4.1 THE ARCHITECTS' INVOLVEMENT

Architectural Record headed by the interim editor Harold Hauf followed the AEC developments more closely than any other architectural magazine of the time.[28] Hauf –who held indeed considerable expertise in military issues– in a rare instance of a direct editorial-article directly addressed the topic of urban dispersion in his Dec. 1950 "City Planning and Civil Defense". There Hauf called for a two-pronged civil defense program. Which first and foremost would address the immediate need for preparation in case of imminent nuclear war: control of panic, designation of shelter areas, evacuation plans, road clearing, rescue, fire-fighting, and decontamination plans. A second leg of the program played along the prospect of a continued cold-war over an indefinite future and where urban dispersion would play a central role as a war-preventive measure, "since reducing the concentration of industrial facilities and population makes atomic bombardment strategically less profitable, and renders the target less tempting."[29] Brought under a wide perspective Hauf mentions: "Every slum clearance project, housing development, industrial plan, traffic artery or other public improvement should be planned with a view to the military as well as the civil aspects of dispersal."[30]

On a more alarming note, the *Architectural Forum* addressed the topic of atomic warfare with a long and sensationally-illustrated article in November 1950 subtitled "Design Lessons from Hiroshima and Nagasaki." Taking the form of a public broadcast news, the article developed in a simple "Do's and Don'ts" list essentially replicating the recent AEC handbook titled "The Effects of Atomic Weapons" published by McGraw-Hill.

Progressive Architecture was the only one to deliver a more sustained approach with their September 1951 issue. In fact, P/A openly contested the AIA rejecting the need of collaboration with the AEC, before opening up a series of articles by architects debating on the topic:

"The AIA is trying very hard, with several engineers' societies, to arrange some sensible relationship of architectural services to the armed services. There seems no good reasons why the Army or any other military branch should find it impossible to work with architect-engineer

teams in the same professional way that any other hard-headed business client does. The business of shopping for prices and forcing unsatisfactory fee arrangements on the profession is as inexcusable as it would be in the case of a shyster building."[31] To this the editors add that "There is no true defense for people against the bomb, now or in the future, except to make damn sure that no bombs will be dropped."[32]

4.2. AIA CONVENTION 1953

Beyond the magazines, the AIA was itself organizing its own activities. Throughout the 1950s, civil defense and response against atomic warfare was a central topic of regional and national AIA conventions. Most of them addressing technical information subjects like the Nov. 1951 "Radioactivity Laboratory Design" conducted by the "Building Research Advisory Board of the National Research Council" (while sponsored by the AEC and the AIA) and widening the collaboration of design professionals to hard sciences and heavy industries like the 1959 "Science in Architecture" conference of the Arizona Chapter. More interestingly, the October 1953 *Middle Atlantic* Regional AIA Conference on Urban Design and Redevelopment brought the discussion to the specific question of dispersion, now opening up to reactions against it as well. Tracy Augur (by then director of urban targets division of the US Office of Defense Mobilization) led the dispersion thesis with the familiar call for defense as primary concern which "fortunately also serves the civilian planner's goal of greater livability." And on the contesting side against urban dispersion was José Sert Dean of Harvard GSD (and instigator of the first educational program on urban design a few years later). In Sert's opinion architects "cannot disturb the historical pattern of towns". And while some measures can be taken to alleviate the danger or congestion, dispersion was not an option for a nation-wide strategy. According to him, the redevelopment of central city areas was "the architect's big job."[33]

5. CONCLUSIONS

In short the Atomic Energy Commission, as well as the technological, scientific, and industrial developments of the post-WWII era signalled a massive expansion of architectural services whose specialization, influence and promotion were overseen and certified by the AIA. Overtaking the licensing boards as the primary organizations that had a say on what the mondus operandi of the profession, the AIA reoriented the profession towards new markets "in the interest of co-operation and progress."[34] The topic of atomic energy was not only interesting in itself, but as a spearhead of a larger scientific and technocratic turn for the profession, represented by the AIA and its close collaboration with governmental agencies such as the AEC. Regarding the specific topic of urban dispersion, no certain conclusion can be reached as to the extent that the civil defense argumentation brought urban dispersion as the major planning approach. The history of its discourse however, is indicative of the changes that took place with regards to the mediums through which architects and planners expressed and organized themselves.

REFERENCES

Annual Report of the Office of Civil Defense, United States Government Printing Office, 1962.

Architectural Record, F. W. Dodge Co., Dec. 1953

Augur, T. "The Dispersal of Cities as a Defense Measure" in Bulletin of the Atomic Scientists, 131-134.

Byrnes, J. B., *Report to the test director : effects of an atomic explosion on two typical two-story-and-basement wood-frame house*, United States. Federal Civil Defense Administration, 1953.

Caldwell, A., Oral history of Alfred Caldwell: Interviewed by Betty J. Blum, The Art Institute of Chicago, 2001.

Colman S., "Promoting the new city: Ludwig Hilberseimer and the Art Institute of Chicago, 1944" in: R. Freestone and M. Amati (Eds.), *Exhibitions and the development of modern planning culture*, Ashgate, pp. 111-129.

Dean, Gordon. *Eleventh Semiannual Report of the Commission to the Congress*, January 1952.

Denny, P., Charles, W., "Reconsidering Hilberseimer's Chicago," *Urban Planning 2020*, Volume 5, Issue 2, p. 243–248.

Domer D. (ed.), *Alfred Caldwell: The Life and Work of a Prairie School Landscape Architect*, The John Hopkins University Press, 1997.

Farrish, M., "Disaster and decentralization: American cities and the Cold War" in *Cultural Geographies*, 2003.

Hauf, H., "City Planning and Civil Defense", *Architectural Record*, December, 1950.

Hilberseimer, L., "The new regional pattern : Industries and gardens, workshops and farms," Chicago : Paul Theobald, 1949.

Hilberseimer, L. The New City: Principles of Planning", P. Theobald, 1944.

Hiberseimer, L., *Contemporary Architecture: Its Roots and Trends,* Chicago: Theobald & Co., 1964.

Kargon R., Arthur Molella, "The City as Communications Net: Norbert Wiener, the Atomic Bomb, and Urban Dispersal" in *Technology and Culture*, 2004.

Marschak, J., Teller, E., Klein, L.R., "Dispersal of Cities and Industries", Bulletin of the Atomic Scientists, Vol. 1, No. 10, 1945.

Neutra, R., *Survival through design*, Oxford University Press, 1954.

Oppenheimer, E., "The Challenge of Our Time," Bulletin of the Atomic Scientists, Vol. 3, No. 10, 1947.

Progressive Architecture, Reinhold Publishing Co., Sept. 1951

Purves, E. R., "Report to the Conference," Arizona Architect, Vol. 3, No 3, November 1959.

Sert, J. L., *Can Our Cities Survive*, The Harvard University Press, 1942.

ENDNOTES

1. Main sources are: Mathew Farrish's "Disaster and decentralization: American cities and the Cold War" in *Cultural Geographies*, 2003, and Robert Kargon and Arthur Molella's "The City as Communications Net: Norbert Wiener, the Atomic Bomb, and Urban Dispersal" in *Technology and Culture*, 2004.
2. Architects and planners were at the time sharing their professional media as well as their professional organizations such the American Society of Planners and Architects (ASPA) .
3. L. Hilberseimer, *The new regional pattern : industries and gardens, workshops and farms,*Chicago : Paul Theobald, 1949.
4. Denny, P., Charles, W., *Reconsidering Hilberseimer's Chicago*, Urban Planning 2020, Volume 5, Issue 2, p. 243–248.
5. The New City, p. 40.
6. Colman S., "Promoting the new city: Ludwig Hilberseimer and the Art Institute of Chicago, 1944" in: R. Freestone and M. Amati (Eds.), *Exhibitions and the development of modern planning culture,* Ashgate, pp. 111-129.
7. Hilberseimer, L., *The Nature of Cities,* Theobold, 1955.
8. This secondary factoring of the atomic war problem to the primary purpose of social –and socialist– order acquires a clear form in Hilberseimer continuation project of *The New Regional Pattern,*1949: "the atomic age which we are not entering, with its changing forces, will, however inevitably change the problems of planning. It may even help to solve some of the human problems involved." Hilbersemeier, L., *The New Regional Pattern*, Theobold, 1949, xvi.
9. Ibid. 180.
10. Considering that Alfred Caldwell was a pupil of Hilberseimer, their sharing of ideas might be hard to distinguish.
11. Caldwell, A., *Oral history of Alfred Caldwell: Interviewed by Betty J. Blum,* The Art Institute of Chicago, 2001, 76.
12. Domer D. (ed.), *Alfred Caldwell: The Life and Work of a Prairie School Landscape Architect*, The John Hop-

kins University Press, 1997, 177.
13. Ibid. 178.
14. "There is nothing more incongruous than atomic bombs and babies" and "we are men on a doomed planet, and destruction is our domicile at last" are some of Caldwell's most intense statements from the article. Ibid.
15. In fact his article was introduced as a continuation of articles by physicists and economics Marschak, Teller and Klein, and the director of the Manhattan project himself Ernest Oppenheimer.
16. See: Marschak, J., Teller, E., Klein, L.R., "Dispersal of Cities and Industries", *Bulletin of the Atomic Scientists,* Vol. 1, No. 10, 1945. Oppenheimer, E., "The Challenge of Our Time," *Bulletin of the Atomic Scientists,* Vol. 3, No. 10, 1947.
17. T. Augur, "The Dispersal of Cities as a Defense Measure" in *Bulletin of the Atomic Scientists,* 131-134.
18. Ibid. 134.
19. The whole issue of the Bulletin of the Atomic Scientists of Aug.-Sep. 1950 is quite an interesting paradigm of the alignment of scientific disciplines to a common strategic political and economic undertaking.
20. Books like Neutra's "Survival through design" (1954) and Sert's "Can Our Cities Survive" (1942) continued to bring to the public audience the individual architects' takes on the subject, but had limited impact with regards to regulatory developments for the profession. The end of the US CIAM (to which both publications where linked) signaled the passing of the main professional initiatives to the AIA, architectural magazines, and their network to the US Congress and governmental agencies like the AEC, rather than professional collectives and academic networks.
21. Policy handbooks such as the "Guide for Contracting and Related Engineering Services" are also related to this Board.
22. Edmund R. Purves, "Report to the Conference," *Arizona Architect,* Vol. 3, No 3, November 1959, p. 22.
23. Ibid. 23.
24. Pawley also served as an advisor to the Operation Upshot–Knothole nuclear tests of March to June 1953. Another AIA member, Bernis E. Brazier, was part of the Evaluation Team. Source: J. B. Byrnes, *Report to the test director : effects of an atomic explosion on two typical two-story-and-basement wood-frame house,* United States. Federal Civil Defense Administration, 1953.
25. The service's description also mentions: "the products of technical information operations are cumulative as more and more information is collected, processed, disseminated and indexed. But to assure maximum usefulness, many special informational programs are necessary." Such "special programs" might be the symposia, handbooks, and committees organized by the AIA in the following years. *Eleventh Semiannual Report of the Atomic Energy Commission,* January 1952, p. 45.
26. *Annual Report of the Office of Civil Defense,* United States Government Printing Office, 1962, p. 36.
27. The educational program of architects was later expanded through the newly formed OCD where a department on architectural training was established in its founding organization chart, with its complete title being "Professional Development of Architects and Engineers." The description mentioned that the "the ultimate objective is to develop the profession's capability of' the Nation's architects and engineers to plan and design protective structures" and the production of manuals, courses on protective structures, guides on planning and designing schools, hospitals, churches, and apartment houses; design studies of definitive plans and details; technical memoranda etc. Ibid.
28. For example, an AIA school design competition was organized in 1962 for a fallout shelter for demonstration and promotion purposes with more than 600 design proposals. *Annual Report of the Office of Civil Defense,* United States Government Printing Office, 1962, p. 38.
29. Elisabeth Kendall Thompson, senior editor of the Record was a registered member of the AEC since the early 1950s.
30. Hauf, Harold, "City Planning and Civil Defense", *Architectural Record,* December, 1950.
31. Ibid.
32. Progressive Architecture, Sept. 1951. p. 1.
33. Ibid. 80.
34. *Architectural Record,* Dec. 1953, p. 10.