Investigating Terms of Transition in the Ohio River Valley

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As an existing condition, many of the landscapes of the Ohio River Valley and Appalachian region have been abandoned by both a market-driven economy and meaningful state intervention. Under-resourced, these communities now face another generation of disinvestment.

Recently, local politicians and leaders within the Ohio River Valley from Youngstown, Dayton, Cincinnati, Pittsburgh, and elsewhere have called for a Marshall Plan for Middle America to reinvest in these deteriorated communities. Similarly, the recent Bipartisan Infrastructure Law promises investment in the area. The encouraging side of these plans largely call for an investment into sustainable businesses, without a design or planning framework for the broader community, in contrast to earlier large scale government programs and administrations such as the New Deal. Even with admirable calls for investment, there is the danger of repeating problematic top-down planning agendas, and eschewing community needs in favor of private interests.

Given this framework, this paper discusses the work of a recent upper level undergraduate architecture studio. Pedagogically central to our investigation is the design of institutions, and the role of the architect in relation to private and state actors. While many architecture studios begin with the assumption that adequate funding will support a student's hypothetical design, we began our work researching the limitations of existing institutions, their funding streams, and their spatial extents. Working alongside community partners Reimagine Appalachia, we questioned the existing functions of institutions including local governments, industries receiving public dollars as part of harmful extraction economies, and the infrastructures that support these activities that are seen as normative. As a result, student designs included the redesign of institutional practices alongside their architectural interventions.

INTRODUCTION

The expansive Ohio River Valley Basin incorporates 14 states, and is inclusive of areas with various regional monikers such as: Coal Country, Appalachia, the Rust Belt, the Midwest, and "flyover country."

A key economic feature that links the geography of small towns and small to midsize cities along the Ohio River is disinvestment. For generations, both the private and public sectors struggled to meaningfully intervene in the region. Even a cursory analysis and examination of a variety of demographic and public health indicators shows the infrastructural breakdown of the modernist welfare state practices of planning, resource distribution, and social relations. Under-resourced, these communities now face another generation of disinvestment, leaving them to face what Patricia Williams describes as an "inheritance of a disinheritance."[1] Prominently, the region recently filtered into a broader public imagination with the 2023 derailment of a Norfolk Southern train, which prompted the emergency and controversial tactic "vent and burn" of hazardous petrochemicals. This ultimately left the small town of fewer than 5,000 residents in East Palestine, Ohio with an ecological, public health, and political catastrophe that it must bear for an unforeseen, yet almost certainly generational, timeframe. East Palestine, and the broader region encompass a geography that is often overlooked by design and planning agendas, largely because there is insufficient capital to attract design to the area or produce regional land use patterns that preference the well-being of communities over more harmful extractive economies.

In this paper, the Ohio River Valley is shown to be emblematic of many disinvested regional sites across the United States, yet has received little design or pedagogical investigation. Students in an upper level undergraduate design studio questioned the positionality of the architect as a practitioner, researcher, and community advocate working in the Valley. Stepping back from an assumed client-architect or client-community relationship, they interrogated the role of state and private institutions, both broadly and in the context of the Valley. Their responses sought new avenues for collaborative practices rooted in mutual aid, and in search of an alternative space of the commons.

Figure 1. Smoke plumes from the Norfolk Southern Train Derailment carrying toxic petrochemicals in the Ohio River Valley. Source: Wikimedia Commons.

EXISTING CONDITIONS IN THE OHIO RIVER VALLEY

The Ohio River Valley is built upon the lands of indigenous people who were displaced by British and American settlement in the 1700's including the Shawnee, Delaware, and Seneca communities. Mahican, Wyandot, Miami, Huron, Pinkashaw, Ottawa and Cherokee peoples also arrived in the region as refugees due to displacement and colonial expansion.[2] The use of the region as a site of extraction and economic flows continued through the 20th century as coal, steel, and other natural resources and products were economically linked through these towns, connecting inland territories to coastal markets.

The recent infrastructure failures of the Norfolk Southern train in East Palestine, or the Brent Spence Bridge that links Kentucky to Cincinnati, Ohio are representative of the neoliberal policies that defund communities and deregulate industries. Such large scale and mediatic failures are often at the center of political conversations of reinvestment, as opposed to the regional "slow violence," a term coined by Rob Nixon, that highlights the often invisible and gradual decay that harms communities.[3]

Ecologically and economically, the region suffers from overlapping concerns related to coal and natural gas extraction and the refinement of these fossil fuels for other purposes. Coal extraction largely takes place through mountaintop removal, a practice that increases flooding of communities in proximity, while decimating local habitat. Natural gas extracted through hydraulic fracturing, or fracking, is an inevitable reality in the region, due to the largest national deposit of Marcellus shale in the Valley. The fracking industry has boomed within the past decade, and is influential in three key ways. First, fracking has produced an abundance of fossil fuels, prompting the transition of many of the coal-fired power plants from the region into natural gas energy plants, and a network of pipelines, wells and storage facilities. Second, it has partially invigorated struggling regional industries, such as the steel industry, through the production of pipelines and equipment. Third, and most importantly, it is spurring the development of a plastics industry in the region. Ethane,

a byproduct of fracking, is mainly used to produce ethylene, which is then used by the petrochemical industry to produce a range of intermediate products, most of which are converted into plastics.[4]

REGIONAL DESIGN & THE DECLINE OF THE WELFARE STATE

Calls for climate-friendly policy shifts such as the Green New Deal are often deemed too progressive for the purple and red-leaning conservative states of the Ohio River Valley. Instead, local politicians and leaders within the Ohio River Valley from Youngstown, Dayton, Cincinnati, Pittsburgh, and elsewhere recently called for a Marshall Plan for Middle America to reinvest in these deteriorated communities.[5] This working group of politicians, industry leaders, and community groups set an agenda that would attract federal funding to the area in support of private development, infrastructure improvements, and limited environmental cleanup of orphaned oil and gas wells. The Marshall Plan for Middle America largely set priorities for the influx of money that would come from the recent Bipartisan Infrastructure Law and Inflation Reduction Act promises investment in the region.

In the broader historical context of the Ohio River Valley, investment by state or private sources is neither guaranteed, or, if it does occur, it tends to reinforce existing privatized institutional frameworks, often benefiting private actors more so than any broader public. The oil and natural gas industries look to shape the region as the next "petrochemical corridor," similar to Louisiana's infamous petrochemical "Cancer Alley," located between Baton Rouge and New Orleans. The pejorative moniker of "Cancer Valley" is used by some environmental advocacy groups in the Ohio River Valley to suggest the nature of ongoing petrochemical development.

Even with recent funding from the Bipartisan Infrastructure Law and Inflation Reduction Act for capital investment projects, private interests continue to be the primary beneficiary.
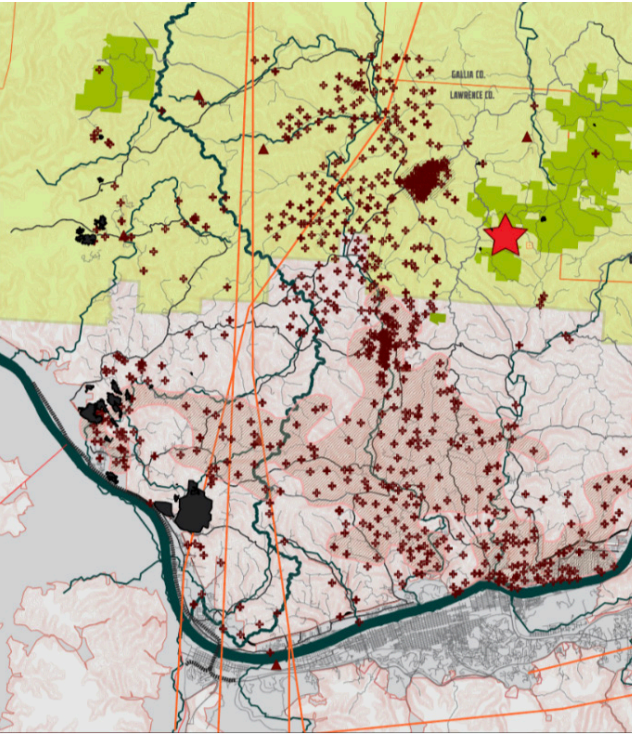
Figure 2. Petrochemical sites and natural areas in the Valley. Source: Zoe Renaldy.

Decades long lobbying by the energy industry resulted in an investment of large scale facilities, such as the highly toxic Shell ethylene cracker facility, in Potter Township Pennsylvania near Pittsburgh.[6] Permits have been filed for another similar facility further down river, although environmental activists continue to resist these efforts.

Historically, President Franklin Roosevelt's New Deal (1933-1939) presented an opportunity to engage in large scale design intervention through infrastructure projects, new towns, and other public works projects to alleviate some of the worst impacts of economic disinvestment. Notably, these interventions were always a "raw deal" for non-White Americans, and in many ways furthered a racialized landscape in areas of the Jim Crow South, most notably the Tennessee Valley Authority.[7] Roosevelt and his "brain trust" of advisors relied heavily upon the prevailing discourse of the time, most notably through the Regional Planning Association of America (RPAA) with figures such as Lewis Mumford, Catherine Bauer, and Clarence Stein.

More recently, political calls for a Green New Deal have pushed architects to imagine possible futures at the scale of communities in the hopes that such a policy might be adequately funded. Over the past decade, Landscape Urbanism has largely influenced the design field in myriad ways, including designapproaches to the Green New Deal. From a research and advocacy perspective, Kate Orff and Richard Misrach's influential design research book Petrochemical America (2012) highlighted the often

invisible territories, technical landscapes, and communities of the extraction-based economies along Cancer Alley. Landscape Urbanism also largely influenced the approach to the Rebuild by Design Competition, funded by the Obama Administration after Hurricane Sandy in 2012.

The funding of projects like Rebuild by Design are admirable in the sense that design could be seen on a national agenda, and that meaningful investment could alleviate some of the worst impacts of the climate crisis. However, they have also been critiqued for their adherence to neoliberalism and the protection of capital at the expense of low-income communities, particularly in the prominent project of BIG's "Big U" in lower Manhattan.[8]

Implicit in the frameworks of the historic New Deal, the contemporary Green New Deal, Rebuild by Design and other similar projects is the alliance between architecture, the remnants of a welfare state, and capital investment. However, as seen in recent eras of funding, private interests largely drive decision-making frameworks at the expense of a robust public sector.

The US still largely operates from a neoliberal framework, with limited state intervention, amid decades of dismantling the remnants of a welfare state. There are longstanding critiques of neoliberalism and its devastating impacts on communities, notably through figures such as David Harvey, Neil Brenner and architects like Dana Cuff, who operate from the theoretical framework of Henri Lefebvre and the "Right to the City."[9]

Design frameworks for the region are largely predicated on the complicity of the architect with existing, yet unsatisfactory, habits of development. The Valley largely exists as a site where private sector markets will not go, and where public sector funding cannot adequately reach. Even if a robust welfare state could be politically possible within a capitalist society, thinkers like David Madden, Peter Marcuse, and others suggest that there is a "myth the benevolent state," the state's primary interest is in serving the interests of capital rather than resolving any broader societal needs.[10]

INSTITUTIONAL FRAMEWORKS AND CRUEL OPTIMISM

If, fundamentally, public investment in the region is largely predicated on the benefits it provides to private actors, such as extractive economies, and calls for a return to a New Deal style welfare state are politically impossible, then an alternative design approach and theoretical framework is necessary. The limitations of such socio-political frameworks are akin to what theorist Lauren Berlant refers to as a "cruel optimism." Drawing from affect and feminist theory, Berlant examines cruel optimism as our attachment to dreams that we know are destined to be unfulfilled, such as our attachment to the ideal of a more robust welfare state. She defines cruel optimism as, "when something you desire is actually an obstacle to your own flourishing."[11] The book was released in 2012, a time when the
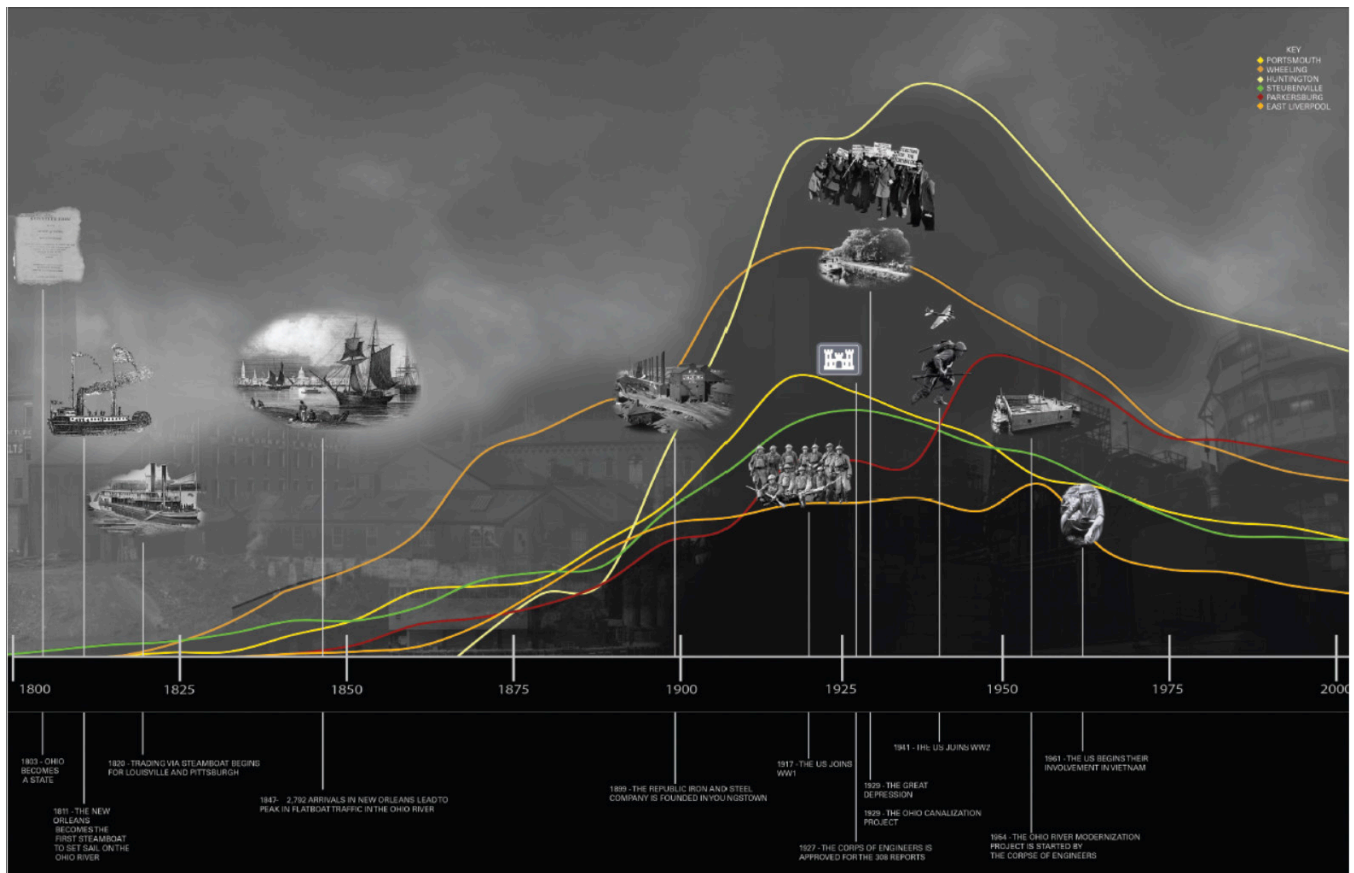
Figure 3. Initial Student Research of Industries and Population. Source: Gregor Tillman.

Obama administration's promises of substantive government change and optimism in the wake of the Great Recession could rightly be challenged, due in part to a lack of government intervention in housing markets. Berlant questions our attachments to existing electoral politics and our hopes that strong leaders and existing institutions might enact meaningful change.

Berlant, echoing Fred Moten's institutional critiques from a radical Black space of the undercommons, seeks a redefinition of institutionalized planning agendas and their capacities to enact change within the lingering framework of a supposed "good life" created at the intersection of welfare state politics and twentieth century forms of capitalist consumption. Berlant says, "Mid-twentieth century forms of expansive world building toward the good life have little or unreliable traction. In a fundamentally unstable economy, planning can be seen as a neurotic reminder of the previous era's optimism that everyone, or anyone, could be significantly necessary to capital."[12]

Rather than relying on twentieth century institutions that still drive most of our social and economic production, Berlant preferences social practices and habits, which they call "infrastructure," as a way to foster new forms of world-building. Berlant says, "Institutions enclose and congeal power and interest and represent their legitimacy in the way they represent something reliable in the social, a predictability on which the social relies. Institutions norm reciprocity. What constitutes infrastructure in contrast are the patterns, habits, norms, and scenes of assemblage and use."[13]

Berlant's definition of infrastructure is similar to Keller Easterling's more expansive definition of infrastructure space, which not only includes pipes, wires, and roads, but also development protocols and the habits of state bureaucracies that reproduce social and material norms.[14] Berlant, in seeking a new definition of the commons in relation to infrastructural practices goes on to suggest that, "We understand why we are overwhelmed by extreme and exhausting threats and actualized violence, as they menace the endurance of the world and of confidence in ongoingness. What's harder to process is why it is hard to bear the very things we want."[15]

CONTEXT OF THE STUDIO: PEDAGOGICAL DISCOURSE & GOALS

Pedagogically, the goals of the studio included the ability to understand and analyze regional forces and flows, as shaped by state and private actors. Through archival research, GIS mapping, and the study of institutional frameworks in collaboration with community partners and reviewers, students were also able to evaluate and create new forms of institutional practices.
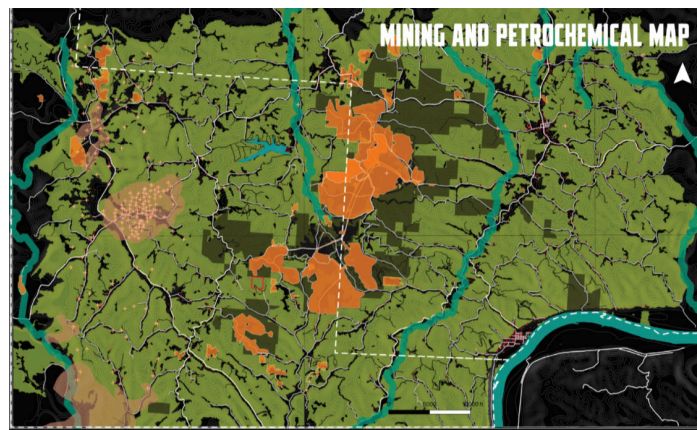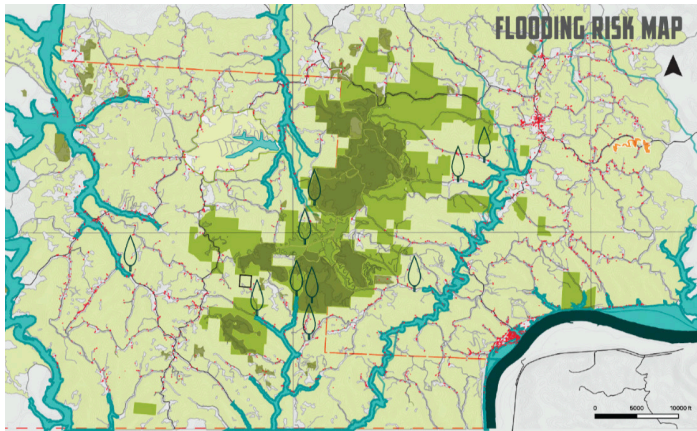
Figure 4. Student design of a feminist Civilian Conservation Corps with identified sites and traveling cabins. Source: Zoe Renaldy, Gigi Elter, Claire VanDamme.

Many architectural studios work from an assumption that either a public or private client will have enough resources to adequately address a students' hypothetical design. Recent shifts in discourse over the last several years promote a more concerted effort to understand the assumptions of resource distribution and extraction economies across broad geographies and the institutional frameworks that direct those resources. The logistical and infrastructural urbanism of academics such as Keller Easterling, Clare Lyster, and Jesse Le Cavalier methodologically adapt the tools of landscape urbanism and apply them to economic and geographic flows through mapping, institutional critique, and understanding the pre-conditions of design. Through institutional critique, an examination of the the profession's capacities to enact scalar change, and a research as advocacy framework, students developed their work.

INSTITUTIONAL CRITIQUE & COMMUNITY PARTNERSHIPS

Berlant's call for new infrastructures, focused on practices which can be multiplied, informs a possible new lens for design and the methods we use for world-building. This is particularly relevant in the context of the studio.

The benefits of world-building visioning activities in the context of advocacy and working with community partners in critical proximity may not be immediately obvious. A common tension exists between students with limited skill sets who wish to test their creative capacities and may be at odds with community partners who have specific projects, funding pathways, and limited time. Reimagine Appalachia, an umbrella organization whose work spans multiple community activist and advocacy organizations and partners on the project, explicitly stated they were seeking design visions for the region, more so than an immediate response to any one issue. Reimagine Appalachia's explicit acknowledgement of the inadequacy of "business as usual" also fostered compelling dialog between the groups. As they state:

> Reimagine Appalachia was born out of a broad recognition that the economy has not been working for most people and places in the Ohio River Valley. In response, a diverse set of economic, environmental and community leaders, and grassroots organizations, came together to find common ground and build the future we want to see—a 21st century economy that's good for workers, communities, and the environment.[16]

Through meetings, students learned of Reimagine Appalachia's ongoing works, which informed their research and visioning activities by providing specificity to specific site histories and ongoing institutional and political frustrations. The research presented back to Reimagine Appalachia confirmed much of their prevailing narratives and understandings of issues surrounding environmental impacts and community neglect. The visioning of the students beyond traditional institutions also provoked conversation about the decades long history of inadequate governmental response led to conversations about the history of state intervention in the region.

The Regional Planning Association of America (RPAA) could reliably depend on the political framework and comparatively large public funding resources of the New Deal to impact regional design in the 1930's. The most robust political framework that exists today is the federally funded Appalachian Regional Commission, first founded by President Kennedy, and continues to receive federal funding to this day. The ARC and later President Johnson's Office for Economic Opportunity (OEO) as part of the War on Poverty focused largely on infrastructure projects the promoted private industry, rather than integrated planning or housing. These programs, as Caroline Filice Smith argues, "were intended to help the poor help themselves, which implied that infrastructural decay…was less the result of corporate and government neglect than the consequence of a supposed 'culture of poverty' passed down through generations."[17] Since the founding of the ARC in 1963, only four counties have achieved the status of economic "attainment" across its 13 state service area, reinforcing the inadequacies of the ARC and its allocation of resources.

Even philanthropic foundations operating in distressed areas of the Ohio River Valley tend to focus on programming through a market-based lens that focuses resources on "quick wins." Given their market-based and indicator-driven cultures, they operate from a mindset where limited resources must be spent on the places with the highest returns. However, such a logic is largely disconnected from the reality of need.

PROFESSIONAL & DISCIPLINARY CAPACITIES

Thinkers, like Peggy Deamer, Dana Cuff, Jeremy Till, and Aaron Cayer work covers institutional critique through the lens of professional practice. They re-shape pedagogies to more critically inquire the assumptions of architectural practice and test the familiar workings of the discipline's capacities. Such approaches complement long-standing alternatives to private sector practice, most often found in community design centers, and spatial justice design practices.

Key attributes of these practices include "initiative-focused" work, as opposed to project-based work.[18] This suggests an ongoing relationship to a set of ideas, such as affordable housing, as opposed to a singular project and commission. This may also include a focus on place-based practices—understanding the context of a public university as a site focused on local and regional issues. Cuff seeks to disrupt the set of practices of the disciplinary core, to extend professional practice into the realm of ongoing social justice-oriented initiatives.

RESEARCH AS ADVOCACY

Understandably, community-based work often defaults to resolving the immediate needs of a community. Research-based

practices can complement such efforts by questioning the underlying structures and power relations that underpin the immediate needs of communities. Eyal Weizman's notion of "critical proximity" to communities provided a framework to understand the Ohio River Valley. Critical proximity stands in contrast to the "critical distance" often assumed when undertaking research projects. As Weizman says, "'Critical' as a mode of practice requires a high level of self-reflexivity as we begin to inhabit the terrain of our own inquiries; but, for us, critical also means vital, urgent, and decisive...the only way to conduct critical research in the world today is in close proximity to, and even complicity with, the subjects of our investigation."[19]

Similarly, the studio drew from the research–based studios of Denise Scott Brown, Robert Venturi, and Steven Izenour. Of specific interest were Scott Brown's roots in the incorporation of sociological methods into an urban design research framework. Scott Brown's interests in "active socioplastics," began with the Smithsons, and continued as she infused sociological research methods with design in the service of historic preservation in Philadelphia and elsewhere.[20]

STUDIO PROCESS

The studio was split into three primary phases: research, institutional assessment, & design. The first two phases consisted of seven weeks total, with seven weeks reserved for the design phase.

The research phase began with an unbound site thematic investigation of issues within the Ohio River Valley. Specifically, students focused on sites along the Ohio River in Pennsylvania, Ohio, West Virginia, and Kentucky. Students constructed thematic timelines and learned GIS mapping methods to research five themes: ecology, energy, history, labor, and community. Students shared resources and provided weekly briefings to studio, sharing datasets, archival documents, and news clippings.

The second phase of the studio began with a weekend site investigation of numerous towns and sites along the Ohio River. This included visits to the Museum of Labor and Industry in Youngstown, Ohio, drone documentation of abandoned coal fired plants along the river, and visits to the Southern Ohio Musuem to study indigenous history in Portsmouth, Ohio among other stops.

Students visited towns such as Marietta, Ohio which struggles with issues of identity, as it is historically tied to ceramics production from small scale bespoke pottery production to commercial dinnerware industries including the international company of Fiestaware, a rare legacy industry that continues to have a broader presence. However, today the town is much more explicitly linked to natural gas production and fracking.

As part of the Institutional Assessment phase, students investigated the degree to which towns such as Marietta receive

financial benefits from the petroleum industry. Students investigated the documentation of specific fracking wells, pipelines, and parcel ownership. While obfuscated LLC listings sometimes
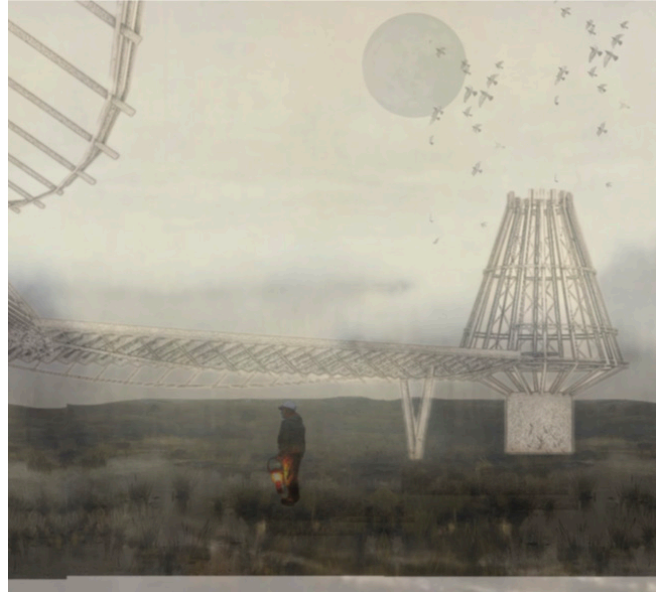

Figure 5. An elevated platform that allows camping along the Ohio River while phytoremediation takes place below. Source: Roman Marra.

prevented students from determining ownership, tracing permits and parcel data through company addresses allowed students to discover that many of the companies benefiting from extraction were rooted in places like Houston, Texas, and were subsidiaries of larger petroleum companies such as Marathon. Students also assessed the state of infrastructure and emissions, based on governmental reports and activist claims. Students also assessed industries such as the mobile home industry, which has a large presence in the region, and determined that exploitive rental and park practices furthered precarious living conditions. Such findings grounded their design interventions.

The design phase asked students to projectively consider new institutions and infrastructural practices stemming from Berlant's framework, and in consultation with Reimagine Appalachia and outside reviewers. Student projects ranged in scope, but all teams worked on at least one specific issue prevalent across the region, and imagined practices beyond traditional institutional roles.

Students in teams of three developed proposals including the reimagination of the mobile home industry as a tactical response to promoting affordable and social housing. Relying on a burgeoning timber industry in the region, students developed a catalog of Do-It-Yourself mail order housing components; a combination of the famed Sears Catalog Homes and Stewart Brand's Whole Earth Catalog which promoted sustainable living

through DIY self builds. An expanded and flexible allotment condition differed from traditional parcel boundaries. Student goals included flexibility of the modules that could expand over time as residents gained more money, and encouraged alternative lifestyles beyond the traditional nuclear family. Older residents relying on mutual aid, multi-generational, and LGBTQ+ kinship networks were all imagined as part of a strategy for housing that could grow and be negotiated with neighbors. A loose zoning code was developed which ensured access to green space and light within any of the configurations as the buildings expanded.

Another team focused on the creation of a feminist inspired Civilian Conservation Corps. Drawing from Donna Haraway's eco-feminism and the current "cottage core" lifestyle trend, the team imagined a collaborative entanglement with varied species of flora and fauna.[21] Within the destroyed landscapes of the region, participants would learn self-survival skills, while engaging in phytoremediation, and creatively patterned plantings at plugged oil well sites that would allow a larger regional marking as plants grew and encouraged further habitat growth. Participants could come and go based on three month to two year assignments. A research station, greenhouse, and public facing farmer's market would encourage local food production.

One design focused on energy production and job creation with the creation of a small scale production facility that would re-purpose toxic fly ash from industries to be used in new forms of sustainable infrastructure throughout the region. Students adopted a site of a former coal burning energy plant and imagined multiple programs operating on the defunct site. Choosing to keep the existing transformers and high voltage lines, students opted to place a solar array on the site to continue electrical distribution to the surrounding area, preserving the valuable infrastructural components. Other ideas included a public facing park, with remnants of the coal plant connected through elevated walkways. This allowed remediation work to continue on site while opening the site to public use.

CONCLUSION

Broadly, the Ohio River Valley studio asked students to consider their positionality as future professionals, and interrogate the discipline's capacities in service of advocacy and new forms of cultural and economic practices. Students considered the role of research in the design studio, while stepping outside the traditional framework of the binary client-architect relationship, imagining themselves operating as part of a broader "office of the public architect."[22]

As public higher education further decimates programs from the humanities and creative arts, questions of interdisciplinary collaboration become not just ideals to strive for, but necessary for institutional survival. To this point, the recent Mellon Foundation initiatives into the Urban Humanities suggest the continued development of research methodologies between disciplines.

Further collaborations with Reimagine Appalachia and other partners in the region will continue in coming years. Within the university, collaborative workshops between departments will allow deeper investigations into research methods. Departments such as film, media, and journalism will share methodologies for investigative journalism, while architecture students will share methods for GIS mapping that will be relevant for their work. Similarly, workshops with Political Science will further deepen students abilities to understand policy briefings, as part of an investigative and forensic framework.

Ultimately, these directions point to alternative practice frameworks for architecture students, rooted in research and advocacy. Rather than research frameworks that promote critically distanced positionality which reinforces certain forms of expertise, a critically proximate research and action practice alongside community partners such as Reimagine Appalachia allow for ongoing initiatives and collaborations.

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