DESIGN ETHICS
An Approach to Ethics and the Built Environment

Levi Wall / DLR Group Professional Development Grant
DESIGN ETHICS
AN APPROACH TO ETHICS
AND THE BUILT ENVIRONMENT
This book was completed in fulfillment of a grant through DLR Group’s Professional Development Grant Program. It would not have been possible without the funding and support of DLR Group, and specifically the support and help of Lori Coppenrath and Dennis Wiederholt. Special thanks specifically goes to Jill Maltby and Dillon Webster for their encouragement and camaraderie, Brice Aarestad for his inspiration, encouragement, and connections, and my colleagues in Denver for their encouragement, support, and great ideas. Thanks to all of my DLR Group colleagues with whom I dialogued with throughout the process of researching, working on a presentation, and creating this book.

I owe much gratitude to Beverly Kracher, for taking interest in this project, and helping guide me through ethics and philosophy. Thanks to Thomas Fisher for your excellent books and other writing, and for taking time to speak with me.

I’d also like to thank the hosts and presenters of the 33rd National Conference on the Beginning Design Student, and the SEED Network’s Public Interest Design Institute in New Orleans, as attending both events powerfully informed my conception of applied ethics for the built environment.

As always, thanks to my family, and especially Arwen, for her persevering love and support.
## CONTENTS

**INTRODUCTION**

**PART 1: ETHICS, LOGIC, DESIGN**

1.0 ETHICAL EXPRESSION 
1.1 ETHICS 
1.2 ETHICS AS PROCESS 
1.3 LOGIC 
1.4 DESIGN AS LOGIC 
1.5 DESIGN AS DECISION-MAKING 
1.6 DESIGN AS ETHICAL INQUIRY 

**PART 2: ETHICS INTERSECTING PRACTICE**

2.0 DUTY, ABILITY + NEED 
2.1 NECESSITY 
2.2 IMPACT 
2.3 DEGREES OF PARTICIPATION 
2.4 DIRECTIONS OF INNOVATION 

**PART 3: DEFINING BUILDING**

3.0 WHAT IS BUILDING? 
3.1 BUILDING AS A TOOL 
3.2 BUILDING AS RESOURCE FLOW 
3.3 BUILDING AS VALUE REALIZATION 
3.4 BUILDING AS AN ACTOR 

**PART 4: DESIGN AS ETHICAL INQUIRY**

4.0 ETHICAL INQUIRY 
4.1 EMPATHY 
4.2 IMAGINATION 
4.3 NEGOTIATION 
4.4 PARTICIPATION 
4.5 EVALUATION 

**FINAL THOUGHTS**

**REFERENCES**
If I were to ask you, “what makes a good building,” how would you answer?

Or if I asked “what is the best park in your city,” or “what’s the most important characteristic of your workplace,” how would you consider your response? These kinds of questions uncover important qualities of the built environment that affect people on a daily basis, which means they also represent concerns that professionals who design the built environment must carefully consider. However, such questions also prove difficult to answer with a sense of authority or finality. The difficulty of these question reveals the complexity of relating all the factors at play, and underneath that, our multiple understandings of “good.”

How do we know, as professionals designing the built environment, that the results of our work are good?

From ancient times, through the Renaissance, and to the present day, thinkers have philosophized about ethics of the physical world. Notably, there seems to be a contemporary resurgence in thinking about our buildings and spaces in ethical terms, expressed through an interest in local and world ecology, energy and resource conservation, humanitarian relief, and helping those in need. Perhaps at least some of the new directions in practice and discourse are due to changing priorities in the workforce. Research shows that, to millennials (those born between 1981-2000), the quality and substance of work matters as much or more to millennial workers as factors such as compensation or title. For example, a 2011 study showed that out of the workers surveyed, 30% said meaningful work, and 25% said sense of accomplishment was the most important factor indicating career success, with high pay in-between at about 27%, and high level of responsibility surprisingly less than 5%. Anecdotally, I can confirm this: Several of my peers in architecture and design have interned or worked for non-profits because they want to make a positive impact on the world, and many others take a stance on what type of work they will and won’t do. I read this as a quest for substance, a real desire to “do good” through one’s chosen profession. This desire could become even more important and normative as millennials begin leading their companies in the coming decades.

Of course, millennials aren’t completely altruistic, and neither is the quest for substance in professional endeavors limited to the younger generation. I would guess most environmental design professionals would give “making the world a better place” as one of the primary reasons they do what they do. I doubt anyone would deny that they want to do good work. But how do we, as those who shape physical environments, even begin to qualify our work in this way? How do we know what good work is? Should building projects merely avoid causing harm, or can they shape life in a positive way? How do we go about projects that aim change the world?

The adage, “we shape our buildings; then our buildings shape us,” is true, then the built environment has more potential than ever before to affect human life, and the planet which we call home, for good or for ill.

How do ethical questions relate to these contexts? First, it’s indeed the case that with power comes the burden of responsibility. Those who have some measure of power in shaping the built environment ought to be cognizant of their responsibilities, and ethics is the lens through which to understand these. At a minimum, those who design the built environment should have a solid understanding of how ethics apply to the built environment to properly do their jobs. Considering the relation of power and responsibility positively, perhaps those who design the built environment, with their expertise and experience in relating humans to each other through space, in interfacing human life with the greater ecology, in affecting the processes that animate our world, and in expressing individual and collective values in physical form. Perhaps they have a unique ability to contribute to and shape the direction of ethical discourse.


The purpose of this book is twofold. First, it’s a general exploration of how ethics and the built environment intersect, and a gateway into further exploration of the many topics at hand. It’s not intended to be a complete resource for either ethics or for design of the built environment, but seeks to cohesively relate the two. The references and footnotes should be helpful in pointing the reader towards resources that more comprehensively cover individual topics.

Second, the book is a framework for understanding how design can become a process of ethical inquiry. This understanding could improve the outcomes of design, and thus quality of the built environment, as well as empower design professionals contributing to ethical conversations that transcend the built environment.

...perhaps those who design the built environment ... have a unique ability to shape the direction of ethical discourse.

The implications of these questions go well beyond qualifying single projects, or describing individual professionals in terms of virtue or vice. Historically, the process of building—shaping the world around us—has always engaged ethical questions, and always reflects the ethos of the builders. In other words, at its core, building is an ethical endeavor, so all built environments matter in an ethical sense.

This becomes pertinent in specific ways given our current context. We now live in a world where more than half the population is urbanized. Over the last century, technological advancement has revolutionized how we communicate and travel. More than ever we rely on and spend time in environments of our own creation, and more than ever, our built environment overtakes the natural one. If the popular
Because building has large and long-lasting impacts on us and our environment, and at its core is a process engaging ethics, building designers ought to proactively engage ethical conversations through the design process. The foundational step in doing this is creating a framework for approaching building design in terms of ethical inquiry, so that our design process becomes our way of discovering, creating, and testing what is good.

This book is created for those who shape the built environment—“building designers,” or just “designers” as I may refer to from here on out, including architects, engineers, interior designers, general contractors, and even building developers and owners. Design is decision-making, so anyone who makes decisions about the physical shape of our world might find this book relevant. Although many of the examples given have to do with projects at the “building” scale, it was written with the full spectrum of environmental interventions in mind, from buildings, to cities, to landscapes, to infrastructure.

This book was created with different modes of consumption in mind. The full text (on the left hand pages for the first three sections) contains, in greater detail, the main ideas of the book. If you’d like a quick overview instead, you can skim by flipping through and viewing the basic points, important quotes, and graphics. Footnotes and links to relevant materials are located in the left-hand margins of each page for easy reference, and to encourage you to explore other resources.
The “built environment” is a decisively large category of places, objects, actors, movement, interactions, and meaning. If building is the act of shaping the world around our lives, then the artifacts of building are the physical expressions of the action of life. Therefore, the built environment is a record of what societies and individuals value— in other words, what they find good, morally acceptable, just, and ultimately worthy of pursuit. Viewed this way, ethical beliefs and what we build are inseparable.

Yet, it is extremely hard to discern the ethical content of a given building or a space just by looking at it. Perhaps some of the most ethically relevant processes of building aren’t readily visible, including the sources of material and labor, energy systems and consumption, and end effects on people. To arrive at a coherent approach for considering the ethics of the built environment, we must go beneath the surface of buildings, spaces, and objects, and examine the processes of their operation and creation.

In addition, thinking coherently about how ethics apply to design of the built environment requires that we first understand the basic approaches of ethics, what design fundamentally is, and how logic supports both ethical discourse and the design process.

PART 1: ETHICS, LOGIC, DESIGN
We could start exploring how we might proactively engage ethics in design of the built environment by categorizing expressions of ethics in current design practices. These expressions could potentially be divided into four categories relating to the contexts of practice, individual well-being, collective human well-being, and ecology.

First, ethical design could express itself in the context of innovating practice. A design practice that changes the shape of their business towards certain ethical outcomes is akin to an individual who shapes their character towards certain virtues. This could consist of a commitment to doing a certain amount of pro-bono work, lending time and expertise for humanitarian causes, and expanding the types of services offered. In addition, this could include concern for the well-being of professionals that are a part of the practice. Whatever the desired outcome or focus, the medium is the structure of the design practice itself.

Several expressions of ethical design are oriented toward benefiting human well-being on the individual scale. Ergonomics, indoor air quality, and accessibility all have an effect on physical well being; furthermore, these things have the potential to effect an individual’s psychological and physiological states.

Cultural, societal and economic concerns relate to collective human well-being, and as a result, are often expressed on a larger scale than concerns related to individual well being. The shapes of our neighborhoods, cities, and public buildings can indicate our collective well-being, as they often make the abstract problems inequalities, lack of culture, and environmental insecurity visible. Conversely, the built environment of our shared spaces can be designed to help solve these problems, and create better societal, economic, and cultural systems.

We often consider the “environment” as a third party affected by our individual and collective lives. In actuality, ecology is the very material by which we create the other two, as each of our environmental interventions require space, materials, and energy. Energy efficiency and renewable energy, and ecological conservation have perhaps been the most popular aims of “green” design, but other expressions of environmental concern involve considering how our decisions affect global ecology, our food systems, and the quality of our inhabited environments.

“Four possible categories of ethical design expressions relate to the contexts of practice, individual well-being, collective human well-being, and ecology.”
1.1 ETHICS

Ethics (as a field of study) is broadly described as the realm of philosophy concerned with morality, justice, and how individuals and societies ought to act. Many well known thinkers have ventured into the realm of ethics as a part of their larger philosophical projects, while others have specialized in ethics. Many contemporary conversations around ethics concern specific fields or professions, such as business ethics or bioethics. Ethical positions are arrived at from logical arguments based on observation, knowledge, and philosophical concepts.

For thousands of years, through books, public forums, and in the arts, humans have offered answers to questions of good, morality, and justice. Every foray into ethics joins in a millennia-long dialogue, building on and modifying what’s previously been said. To help make sense of the multiple, and sometimes complex conversations around ethics, we could describe the majority of ethical positions in the Graeco-Roman/Western tradition as belonging to four basic approaches:

**Virtue ethics** is concerned with building character and being virtuous, what it means to live a good life, and what we should aspire to as humans. Plato and Aristotle’s writings exemplify classical virtue ethics, focusing on the habits and faculties that help individuals understand good and truth, and as a consequence, live happily. Early Christian thinkers such as Saint Augustine and Saint Thomas Aquinas connected Greek ethical traditions to their theological reflection, and saw Christian ethics as a consummation of the virtue ethics of the preceding Greek philosophers. Virtue ethics has seen a post-modern resurgence through the work of several philosophers, including Bernard Williams, who critiqued deontology and returned to some of virtue ethics’ questions as a basis for inquiry, and Alasdair MacIntyre, who argues for a practical form of ethical inquiry based on the positions of Aristotle and Thomas Aquinas.

**Duty ethics**, also known as deontological ethics, is concerned with what is right in terms of to whom, or to what, we have a duty. In its purest form (as conceived by Immanuel Kant, for example), duty ethics claims that certain actions are universally right or wrong, regardless of context. For example, honesty is always right, even if lying to someone could save them from injury. More complex expressions of duty ethics focus on layers of responsibility and the complications of competing claims, such as W.D. Ross’s development of *prima facie*.

“Virtue ethics explore building character and being virtuous, what it means to live a good life, and what we should aspire to as humans.”

“Duty ethics is concerned with what is right in terms of to whom, or to what, we have a duty. In its purest form... duty ethics claims certain actions are universally right or wrong...”
duty in addition to absolute duty. Kant, Ross, and others attempt to establish norms based on right motives and appeal to universals, whether that be divine commands (i.e. religious morality), self-evident truths (like that we must keep our promises), or the implications of objective reason.

Utilitarian ethics focuses on the consequences of actions, and generally tries to ascertain what will result in the greatest good (in terms of quantity or quality). Often, utilitarian ethics starts with the premise that people are naturally self-interested and rational, and therefore what is good can be understood in terms of pain and pleasure. Jeremy Bentham is known for popularizing the idea of quantifying the value of pleasures and pains for the purpose of increasing the former and reducing the latter (termed post facto hedonistic calculus). John Stuart Mill built on Bentham’s ideas, clarifying concepts of pleasure and pain, and claiming a balance of tranquility and excitement is the key to a satisfied life. Bentham, Mill, and contemporary descendants of their utilitarian theories place the definition of morality on the potential of actions to produce good.

A fourth approach to ethics focuses on justice, rights, and fairness in the context of society. John Rawls, a 20th-century philosopher, saw equality and reciprocity as a foundation to ethical behavior and just laws, acknowledging self interest and rationality (like utilitarian philosophers), but adding equal opportunity as necessary for all people to achieve liberty to seek their self-interest. Justice ethics may resonate with our current cultural moment in concerns for the equity and rights of different groups.

Dividing ethical discourse into these four categories doesn’t encompass all the philosophies we could consider important, but it does concisely categorize some of the major ethical ideas developed in the west over the past few millennia. It’s important to recognize the influence each of these approaches to ethics have had on the way we determine notions of good, morality, and justice in our society. For the intents and purposes of this book, we will not thoroughly investigate any particular ethical position. Rather, we’ll be exploring the potential of the design process to conduct ethical inquiry into the built environment.

“Utilitarian ethics focuses on the consequences of actions, and generally tries to ascertain what will result in the greatest good (in terms of quantity or quality).”

“Justice ethics may resonate with our current cultural moment in concerns for the equity and rights of different groups.”
In addition to the pursuit of establishing principles and systems for understanding good, morality, and justice, some philosophers have focused on the very processes that help us arrive at ethical positions. Thinking about ethics in terms of process is especially applicable in a discussion of the ethics of the built environment, as our decisions about the built environment constitute design, and design is often an investigative, iterative process. G.E. Moore’s and John Dewey’s conceptions of ethical process are especially relevant to how we could conceive of design.

G.E. Moore is known as one of the founders of analytical philosophy. Applying an analytical approach to thousands of years of humanity’s ethical reflections, Moore succinctly describes ethics as the “general enquiry into what is good.”1 Whether philosophers seek to know what is right conduct, what leads to the most pleasure, or what is fair, they ultimately are trying to discover things with the characteristic of being good, through the process of inquiry. Elsewhere Moore argues that good is actually an undefinable property, and that the question “what is good?” is an open question.2 In other words, if anything were conceptually equivalent to “good,” it would be indistinguishable, unable to describe its meaning outside of itself (i.e. a tautology). Therefore, ethics is a pursuit of the property of good, through which we discover the actualization of good, or the good.

Considering ethics in terms of inquiry encourages us to study existing ethical frameworks as subjects, asking “how is good defined,” before asking “what things are good.” This approach points us towards critical self-reflection about values, which is something any field needs to pursue to remain innovative, relevant, and beneficial to society. It also casts ethics as a continuous process of iteration, dialogue, and investigation, which are all transferable to the process of design.

---

1. Denise, White and Peterfreund, Great Traditions in Ethics, 249
   “This, then is our first question: What is good? and What is bad? and to the discussion of this question (or these questions) I give the name of Ethics, since that science must, at all events, include it.” (From Principa Ethica, G.E. Moore, 1948)

2. Denise, White and Peterfreund, Great Traditions in Ethics, 252-253
   “I do not mean to say that the good, that which is good, is thus indefinable; if I did think so, I should not be writing on Ethics, for my main object is to help towards discovering that definition. It is just because I think there will be less risk of error in our search for a definition of the good, that I am now insisting that good is indefinable. I must try to explain the difference between these two. I suppose it may be granted that ‘good’ is an adjective. Well the good, that which is good must therefore be the substantive to which the adjective ‘good’ will apply.” (From Principa Ethica, G.E. Moore, 1948)
John Dewey was active in the spheres of educational reform, sociology, and philosophy as well as ethics, and especially sought to apply scientific and logical thinking to these fields. Dewey is often defined as a pragmatist or instrumentalist, in the sense that he saw ethical inquiry as a tool to improve social, economic, and political structures. Dewey asserts that the things we value (objects of desire) are only obtained through “the study of the conditions of their manifestation.”

In other words, for Dewey, ethical inquiry should jettison the typical approach of social sciences, and instead follow the physical sciences process. He spells this out clearly when he notes that in implementing such a model for ethics, “…all tenets and creeds about good and goods, would be recognized to be hypotheses... to be tested and confirmed — and altered — through consequences effected by acting on them.” Dewey is essentially recommending the scientific method as the model for approaching ethics.

Although the design differs from science, one can reinforce the other. At the beginning of the design process, we often investigate precedents to understand them, in an attempt to replicate their successes and avoid their failures. After a completion of a project, we often evaluate it similarly. During the design process, we often posit ideas through sketches, models, and other forms of realization to see if they work. These modes of design often mirror the forming and testing hypotheses—not dissimilar from the scientific method. More formally, design research applies rigorous scientific process to form a definite understanding of a subject. Taking Dewey’s equation of ethical positions to hypotheses, and understanding the ethical nature of designing the built environment, we could say that our buildings, spaces, chairs, watches, and automobiles all have an ethical content that we could test the success or failure of.

Through Moore’s and Dewey’s approaches to ethics, we could begin to understand an alignment between ethical inquiry and the design process. As a result, we could apply the logic of ethical inquiry to the process of design, or in other words, we could practice design as ethical inquiry.

“…all tenets and creeds about good and goods, would be recognized to be hypotheses... to be tested and confirmed — and altered — through consequences effected by acting on them.” – John Dewey

“...we could apply the logic of ethical inquiry to the process of design, or in other words, we could practice design as ethical inquiry.”
Since ethical arguments are constructed in logical forms, it would be helpful to review three possible approaches to logic:

**Deductive reasoning** is a type of logic where stated premises are combined to establish or predict something as true. A well-known form of deductive reasoning is a syllogism, for example “an evergreen tree doesn’t lose its leaves in the winter; the tree in my front yard is an evergreen; therefore, the tree in my front yard won’t lose its leaves in the winter.” Deductive reasoning usually uses general premises to establish something specific, and is utilized often in mathematics and logic. 1 2

**Inductive reasoning** runs in the other direction of deductive reasoning, instead relying on specific examples to establish that a general premise is probably true, or to form a theory. For example, “an evergreen tree doesn’t lose its leaves in the winter; the tree in my front yard hasn’t lost its leaves in the winter; therefore, it is an evergreen tree.” There is a possibility of an inductive line of reasoning concluding with a falsehood (for example, the reason a tree doesn’t lose its leaves could be that it’s made out of plastic). Inductive reasoning is frequently used in the sciences. 3

A third form of logic is **abductive reasoning**, Charles Sanders Peirce, 19th and early 20th century philosopher and scientist, is credited for first recognizing abductive logic’s role in reasoning. 4 Abductive reasoning could be considered somewhere between “more or less guessing”, and forming likely hypotheses from the available facts. In his book *Designing Our Way to a Better World*, Thomas Fisher notes that “Peirce’s writing comes as close as that of any philosopher to putting into words what designers frequently do intuitively.” 5 Fisher goes on to make that case that because the design process often considers many (sometimes disparate) conditions, it logically resembles abduction. Designers necessarily must intuit several possible “right” answers as a shortcut through the infinite possibilities that could be created and tested.

The design process could be thought of primarily as a form of abductive reasoning, with the results of abduction supported and evaluated through inductive and deductive methods.
In its resemblance to abduction, design involves making best guesses based on available information, and rarely achieves a "right" answer that everyone can agree on. This is true of all fields of design, which is why it’s difficult to judge posters, pens, or buildings as simply “good” or “bad” without the aid of individual criteria that measure success or failure. Indeed, we usually let criteria inform our designs on the front-end, arranging them into a framework for our process. Improving the design process often involves gaining a deeper understanding of the relevant criteria, discovering new relevant criteria, evaluating how our designs respond to the criteria, and lastly, refining the way we relate criteria.

Considering this, it becomes clear that design is not solely an abductive pursuit, but usually employs induction and deduction to focus its aims. For example, in designing the lighting for a school, architects and engineers might rely on guidelines for lighting density, studies on daylighting, and observation of existing schools; they might further refine their design with performance modeling. Finally, they might conduct a post-occupancy study to understand how the implemented system actually performs and is used, as a way to inform the users, or inform future projects, or both.

Design starts to resemble a cycle of discovery, guessing, and testing, where guessing is the animating activity, discovery is its result, and testing studies guessing, and informs discovery. This describes how the design process becomes self-informing, but there’s an additional layer to account for. Design (as a whole, and within each discipline) has a body of discourse made up of individual designers and projects, which each have a voice in the overall conversation, which in turn informs the design process in terms of criteria and frameworks. Consciously recognizing design as an activity within a larger conversation or discourse will definitively shape how it is practiced.

“Design starts to resemble a cycle of discovery, guessing and testing...”
In the context of building, and particularly within the AEC industry, "design" in the narrowest sense means arranging the visual aesthetics of a project, and in the broadest sense means any form of decision-making. In considering individual roles within a profession, narrower definitions would suffice, but in exploring the full range of meanings, and functions possible in the built environment, the broadest definition of design is the most helpful. I suggest we consider design as merely the process which forms decisions. The impact of decision making in a project is setting the conditions for building, meaning determining the what, how, and where of building (and sometimes the why as well). Therefore, those who design in the process of building include designers, engineers, contractors, and owners. It’s relevant to note that in societies both past and present with less vocational specialization, the roles of developer, designer, constructor, and end user often overlap.

Building design professionals have generalized or specialized expertise in setting the conditions for a project, and typically play a critical role in the process of building. However, the point has been made that many of the most impactful decisions of a building project are typically made neither by, nor with the aid of a building design professional. For example, the site, concept and proforma for a development are often determined before architects and engineers are hired to design the project. Instead of diagnosing this as a problem and prescribing a solution, I recommend expanding the conception of design process to include the decisions owners, owners’ representatives, contractors, and government regulators make. We could also include future building owners, users, and occupants as those who shape the use and identity of a building or space. This broad definition of design allows us to analyze the impacts of all decisions in the course of a project’s lifespan, not just the ones within the scope of our own specific professional role.

At the same time, expanding the conception of design shouldn’t suggest that architects, engineers, and other designers ought take a passive role in the process of building. To the contrary, the specific skillset and knowledge base belonging to each of these professions give them an advisory status within the process of building. If shaped by ethical concerns, this status can be leveraged to improve the outcomes of building.
Because ethical positions are constructed using logical arguments, and the design process has a logical course, the design process itself can be the means of constructing and evaluating ethical positions. In other words, the very framework for understanding value of our interventions in the environment exist within the design process. Design, animated by abductive reasoning, and evaluated by induction and deduction, can proactively discover and test the ethical potential of building. This application of ethical inquiry to the design of the built environment, is the activity we could refer to as design as ethical inquiry. Through design practiced as ethical inquiry, we can discover, test, and create good outcomes in the built environment.

The idea of discovering and testing what is good in the built environment echoes John Dewey’s scientific approach ethics. Dewey claimed that our understanding of “what led us to like this sort of thing, and what has issued from the fact that we liked it” is integral and critical to our understanding of value. This notion also aligns with Italian architect and academic Giancarlo de Carlo’s notion that in the context of building, design’s “real role should be that of generating processes.” Through understanding the inputs, outputs, and processes of building, we can understand the value of what we design, and what causes value. Therefore, design as ethical inquiry, can also critique the processes of building and establish criteria for determining good outcomes.

Design practiced as ethical inquiry can leverage the structure of the design process to both improve the objects of the design process and produce ethical insight.
The most basic reasons why humans build hasn’t changed much in the course of history: We desire to shelter and protect ourselves, orient ourselves within the cosmos, and discover and create meaning for our lives. In a sense, the most basic aim of ethics hasn’t changed much either: answering questions of good, morality, justice, and the right way to live. But our methods technology for building, practices of design and specific cultural values have all evolved, perhaps most rapidly in the last century.

For these reasons, it’s essential to examine the intersection of building design and ethics as it exists currently and as it will exist in the near future. The nature of this intersection is established by a changing sense of duty, a growing need for leadership in ethical issues, the technical ability of design professionals, the necessity of the profession to meet current challenges to stay relevant and survive, and the potential of building designers to create an impact.

We must ask: Where does ethics intersect design of the built environment in the current context? How should ethics effect current practice?

PART 2:
ETHICS INTERSECTING PRACTICE
Duty

Perhaps the most visible development of ethical concerns in the built environment is a changing sense of to whom or what design professionals have a duty to. Since architecture’s modern movement, and now with increasing specificity, the design professions have espoused goals such as protecting the environment, housing those in need of shelter, and revitalizing cities, to name a few. Discourse categorizing and codifying these movements comprise entire sub-genres of literature, including books such as “Cradle to Cradle: Remaking the Way We Make Things,” “Beyond Shelter: Architecture and Human Dignity,” and “Rebuilding the American City: Design and Strategy for the 21st Century Urban Core.” Each of these movements has a unique focus, but all hinge on the premise that those who design the built environment have ethical responsibilities beyond typical professionalism, extending to locality, ecology, and humanity as a whole.

Ability

Designers within the AEC professions (as those who define the conditions for building in a specialized, advisory capacity) indeed are critical to the processes of building. We are technically capable of coordinating the technical aspects of building, and this makes us well positioned to lead in creating the ethical norms around the process of building.

In addition to professional ability, there is an ability to expand our impact. Some say the field of architecture, for example, directly serves only 2–5% of the world population. This figure is both hard to verify and easy to imagine; either way, it speaks to the lack of involvement of design in many of the world’s problems. One solution to this is to expand a profession’s reach to serve underserved populations, which is the strategy of academic programs such as Auburn University’s Rural Studio, which designs and builds houses for rural Alabama residents; firms like MASS Design Group, which has designed multiple health facilities for impoverished communities in Africa; and organizations such as the Open Architecture Collaborative, which provides help to nonprofits and community organizations in local chapters internationally. Another solution applies designers’ expertise and process, which is termed “design thinking,” to problems not typically considered as design issues. This approach is detailed in Thomas Fisher’s book, “Designing Our Way to a Better World.”

References:
4. I’ve seen this figure or similar estimations in several books and presentations including Thomas Fisher’s introduction Expanding Architecture: Design as Activism (Bell, Bryan, and Wakeford, Katie. Metropolis Books / Belknap Press, Texas, 2008). Depending on the definition of “direct” service, and the scope of architecture as a profession, this figure might fluctuate. The point remains that architecture, engineering, and other design services are needed by the majority of the world’s population, but currently only benefit a minority.
Need

There is currently a void of leadership in the design and production of objects and environments, which designers have an opportunity to fill. Vilém Flusser clearly outlines three implications of the ethical ambiguity in contemporary modes of production in his essay, *The Ethics of Industrial Design*.

First, Flusser first asserts that contemporary society tends to lack the stable, monolithic norms of many past societies, and any remaining rules "no longer claim peoples’ trust." He writes "The only authority that seems to be more or less intact is science. Of course, it always claims to be engaged in value-free research, and as a result it does provide technical norms but not moral norms." In the void of authoritative morality, there are no clear rules for the ethics of making and building.

Second, the process of building has become increasingly complex and specialized in terms of means of production and parties involved. To be sure, specialization has many advantages, but it makes authorship hard to define, and thus makes responsibility over outcomes ambiguous. Flusser notes that "the design process is organized on an extremely cooperative basis. For this reason, no one person can be held responsible for a product anymore."

Finally, in contemporary western society, we tend to assign responsibility to producers in addition to consumers. "If someone stabbed someone else with a knife, he carried sole responsibility, not the knife’s designer. Here the production of knives was a sort of pre-ethical, value-free activity. This is no longer the case, however," Flusser describes. "Yet, the complex contemporary system of production, involving software, automated robots, designers, and financiers, it is increasingly difficult to assign responsibility. If designers do not take the lead in the ethics of production, who will? In other words, "A situation in which designers do not address themselves to these questions can lead to a total lack of responsibility." Flusser begins his conclusion, "can lead to a total lack of responsibility."
“There are several global issues building designers must have a hand in solving, or risk losing relevance and credibility.”

There are several global issues building designers must have a hand in solving, or risk losing relevance and credibility. World population has increased exponentially in the last century, and within this trend, more of the world’s population is urbanized than rural.\(^1\) Energy consumption has also increased, creating a need for greater energy efficiency and reliance on renewable sources.\(^4\) Buildings continue to be a large source of carbon dioxide pollution, with industry and transportation making up the rest.\(^5\) Designers can’t effectively confront these issues without an ethical approach to design, or a framework for understanding how design decisions can contribute to solutions.


Several challenges face design professions internally as well. Job automation is full of potential benefits and harms to designers, offering them the ability to wield incredible power, but also eliminating many of the technical aspects of many occupations. This will drive building designers to increasingly invest in their expertise and ability to make non-technical decisions, including their understanding of the ethical implications of their designs. The Internet similarly poses both opportunities and threats to the built environment itself, as it continues to be widely adapted. On the one hand, it challenges physical space for the dominant role in hosting our relationships, commerce, and exchange of information; on the other, it promises to augment our relationship to the built environment. In both directions, designers need to strive to make the built environment relevant. Overall, the advancement of technology makes non-technical skills increasingly valuable, and thus a necessary area of focus for designers..."
Perhaps the most convincing argument that design professionals need to become experts at the ethics of design, is a positive one: through the massive impact building has on the world, designers have incredible potential to impact the world for good (or for ill), both in aggregate, and individually. We’ll explore a couple scenarios from the perspective of a hypothetical designer, and assume this building designer is responsible for about 5,000 square feet of space per year.¹

A large portion of carbon emissions, over 2.2 billion metric tons per year in the United States alone, are from residential and commercial buildings.² Designers can reduce energy use, and therefore carbon emissions, by following the guidelines of the 2030 Challenge and similar efforts. Designing to 2030 standards (based on the current target reductions) could result in a 30% reduction in energy usage per year.³ For the hypothetical 5,000 SF, this roughly translates to 21 metric tons of CO₂, which is the equivalent of taking 4.5 cars off of the road.⁴

Productivity is important to office workers, factory workers, teachers, and students alike. Studies show that access to daylight, outside views, and fresh air could improve workspace productivity by at least two percent.⁵ This may not seem substantial, but assuming just eight or nine workers use the hypothetical 5,000 SF, this would result in over $19,000 of increased output per year.⁶

These are just two examples of how the design of spaces can have a real, measurable impact on people and the world around them. Designers have the ability to positively shape the world in significant ways as individuals, and in aggregate, the effects are multiplied. Ethical inquiry could help focus, direct, and amplify this impact by defining criteria for positive outcomes and establishing imperatives for design practice.
In addition to discussing how ethical concerns intersect with design and how that ought to shape the concerns of practice, it would be helpful to describe to what degree designers could engage ethical concerns.

In a sense, all building is ethical building, and thus all design concerns ethics. Someone who alters their environment naturally implies they have the right to do so, and calculates how it will benefit them. They might also contract for the work and negotiate with a legal authority. Someone designing for another party would take on all of these considerations, in addition to relational obligations to their client and their own legal obligations. Further, the complex context of contemporary design, and the espoused ethical focuses of contemporary practice force designers to be conscious of the ethical implications of their work. However, it does not follow that all instances of the design process engage these ethical concerns equally. Distinguishing between passive consideration, active participation, and proactive engagement of ethics could be a way to define degrees of ethical consideration in design.

Passive ethical consideration is inevitably responding to normal duties to clients, laws, and business standards—its baseline behavior required to retain work and not get into legal trouble. Perhaps this approach does no harm and functionally resembles design professions as they’ve historically existed, but it refuses to acknowledge the complexities of design authorship, changing norms, and challenges outside the scope and clientele of historical practice.

Active participation involves conversing and acting beyond the baseline behavior towards ethical ends within established frameworks. This degree of ethical consideration is becoming encouragingly common in building design, with professionals seeking LEED and WELL certification, discussing sustainability in the public realm, and raising the profile of humanitarian crises.1–2

Proactive engagement of ethical design is strategically shaping the conversations around these challenges, necessities, and impacts of design practice, and innovating new ways to answer them. Proactive engagement accepts a degree of authorship for expanded agency, and helps create ethical norms. To summarize, passive consideration is static, active participation is expanded, and proactive engagement is expansive.

1. LEED is a green building rating system created by the U.S. Green Building Council. https://www.usgbc.org/leed
2. WELL is a building rating system focusing on health and well being. https://www.wellcertified.com

“Distinguishing between passive consideration, active participation, and proactive engagement of ethics could be a way to define degrees of ethical design.”
In addition to understanding the degree to which design practice might intersect with ethics, and to clarify how design practices engage in expressions of ethical design, it would be helpful to discuss the “directions” toward which practices innovate. We could describe ethical innovation in design of the built environment in terms of activism, expansion, and depth.

**Activist** practices orient themselves towards specific ethical concerns outside the basic purview of practice, and often outside the typical market demand. In other words, they usually are characterized by concerns outside of their own business interests. For example, environmental stewardship is a focus many practices have adopted and advocate for through, and in conjunction with their work. We could characterize such practices as “activist” in terms of their commitments to environmental stewardship.

**Expanded** practices seek to enlarge the scope of services, or the client base, beyond that of similar practices. Some activist practices could be considered “expanded” because they actively serve individuals or organizations outside of typical design practice. For example, MASS Design Group has interest and expertise in improving healthcare outcomes, which they explore through projects in underserved areas of Africa and South America. Other expanded practices don’t necessarily have an ethical focus, but rather have expanded their services to increase agency in the design process. Jonathon Segal is well known for his architect-as-developer approach, which allows more control over the vision and design of his housing projects. Duvall Decker is another notable firm that develops many of its own projects, and also offers management and maintenance services, which allows them to create and operate more efficient, sustainable buildings for their clients.

**Deepened** practice increases the rigor and knowledge base of design. This could include researching, innovating within the design process, and creating better evaluation tools. For example, a practice oriented towards designing housing solutions for refugees (activist) will as a result be serving a client base beyond a typical practice (expanded). Deepened practice is critical; it could be though of as a foundation for activist and expanded practice, as new models must rely on a new knowledge and methods. However, activities that deepen the foun-
dations of practice may not have a specific ethical focus; many engineering and design firms conduct research or create new tools in the typical course of business. When this is the case, research and new tools could be utilized in new contexts to engage an ethical concern.

The story of BioLite, a company that produces outdoor power, cooking, and lighting gear, is a great example of deepened practice as a foundation for activism. Co-founders Alexander Drummond and Jonathan Cedar started created and implemented a thermoelectric chip to harness heat energy to power a smoke-reducing and efficiency-boosting fan. Although Drummond and Cedar originally designed the stove for recreational purposes, they eventually realized the stove could replace the dangerous indoor stoves used by millions in developing areas. The original BioLite stove and subsequent HomeStove have improved the lives of thousands by reducing the amount of fuel required for heating and cooking, reducing smoke inhalation, and providing a source of electric charging.4, 5

These three directions of innovation—activist, expanded, and deepened—are depicted as axes to suggest that innovation usually occurs in more than one direction. Understanding three possible directions of innovation also imply that there are multiple ways to proactively engage ethical concerns.

After understanding how design and ethics intersect—both conceptually and in the context of current practice—we must understand the object of our design decisions: the built environment. As with any other endeavor, how we define the product of what we do will inevitably effect our approach to how we produce it.

This is especially important when considering the buildings, spaces, and objects that comprise the world around us, because their physical characteristics often obscure the processes animating them. In terms of ethics, a physical object is inert, but the intentions, purposes, and effects of that object are of utmost important. Therefore, to effectively consider the ethical implications of the environment we’ve created around us, we must uncover why we build, how we build, and what the products of building actively do.
“Contemporary architecture tends to produce objects while its real role should be that of generating processes. This distortion confines architecture to a very narrow strip of a whole spectrum... leaving it open to the risks of dependency and megalomania, and leading to social and political indifference.” – Giancarlo de Carlo; Space and Society, 1978.

The profession of architecture, its related design and engineering fields, and the building professions all pertain to both buildings and building; in other words, these professions ultimately produce objects, and additionally shape the processes producing those objects. For those of us practicing in these fields, as we distinguish between object and process, building and buildings, we tend to think of the finished product of our work as static objects. Indeed, our business contracts are usually structured around providing a building in a certain condition, or a set of drawings that defines the intention for a space- in either case, a static, tangible deliverables. Yet, the reasons humans build in the first place are intangible, including needs and desires. The thoughts and intentions of building often exist decades before the first line is drawn in design, and the building could last hundreds of years after completion. Physical form effects, but is not conceptually equal to how we interact with buildings, and how they effect us, our societies, and ecologies.

Thinking of a building as merely an object in stasis limits how we can consider it in ethical terms, as it precludes the intentions, processes, and effects which buildings embody. Therefore, we should purposefully think of a built intervention as inextricably linked to both the processes used to create and sustain it, and to the reasons behind creating it in the first place. To help us understand the both the processes and ends of building, I will posit four layered definitions:

1.) a building as a tool intervening in our environment, a mediation between us and the rest of the world

2.) building as a continual process of resource flow

3.) building as an act of value realization

4.) building as an actor in a network of things, people, and places

3.0 WHAT IS BUILDING?

An adeptness for tool-making is one of the most distinctive characteristics of the human species. A tool is often thought of as something we hold in our hands, but could include anything we implement to augment our limitations towards specific ends. If this is the case, our most visible expressions of tool-making are all around us: our homes, cities, roads, vineyards, canals, all which act as physical extensions of our lives. These tools that surround us shape our experience in powerful ways, and are the product of the process we call building. We could say that the reason we build is the same as the reason we create any tool: to give us an advantage in interacting with the world in the way we best see fit.

A primary way built interventions act as tools is by delineating spatial relationships in the larger environment, mediating between an "inside" and an "outside". In part, this mediation functions physically to adapt human biology to the surrounding ecology. Buildings shelter us from the elements, mitigate excessive cold and heat, modulate light and air, and protect us from danger, all to create ideal environments that (like other tools) increase our efficiency, effectiveness, and capacity to carry out essential activities. **A building is a tool for life.**

The 20th century architect Le Corbusier succinctly defined this concept in modern terms, when he referred to a house as a "machine for living in." Engines, steamships, silos, and factories were Le Corbusier’s contemporary analogies for illustrating the tool-like nature of buildings. His well-known formulation helps us to consider buildings in terms of function, as a machine always has a specific function as its end. It’s important to note that Le Corbusier not only thought of buildings as machines, but aesthetically expressed this idea in much of his work through machine-like organization, pure forms, and state-of-the-art technology and building techniques. Building's capacity to express ideas is important as building's capacity to biologically adapt us to our environments, and is a consistent feature of humans altering their environment.

The expression of belief and world-view through the act of building is a phenomenon preceding written historical accounts. In *The Domestication of the Human Species*, anthropologist Peter J. Wilson asserts that "the same principles are employed by people to build houses as..."
they think are used in the structure of the universe.”  Wilson illustrates this through accounts of Dogon homesteads in West Africa, built into “geometry that models the body,” houses of the Atoni people in Indonesia, domed like the sky and divided in plan like a compass which “represents and models the universe,” and traditional Fijian houses, which are oriented in relation to the sea as a “in effect, map of Fijian hierarchy and etiquette.”  In other words, homes represent the identity of their inhabitants to the outside world, and represents the outside world to their inhabitants. Buildings not only mediate between human biology and the greater ecology, and between human productivity and the greater economy, but also between individual expression and conceptions of society and the cosmos.

To put this into context, we could think about how we’ve chosen our current place of residence (assuming we had a measure of choice). Perhaps you moved into a specific neighborhood for its physical proximity to your work, or because it’s within the boundary of a certain school district. Perhaps you’ve purchased a property as an investment that you can sell in several years, or instead, you rent an apartment to live a more carefree lifestyle. Maybe you chose a mid-century modern house, because you like the clean lines and warm materials, or maybe you chose something built recently, because you know the roof and furnace won’t need immediate replacement. All of these considerations are examples of how, when we are able, we choose our homes based on how they define our relationship with the world in terms of shelter, geography, society, culture, economics, lifestyle, etc.

All built interventions mediate between the “us” and countless systems both visible and invisible. We build because we desire to shape the world in specific ways, and what we build is shaped by our concept of how the world ought to be.”
If we’ve answered the question of why we build, the next question to ask might be “how do we build?” or “what is the process of building?” The building process consumes resources, or perhaps we could say “rearranges” them into a more usable form. Iron is alloyed with other metals into steel, and then extruded into shapes; the ingredients of concrete are combined and mixed, and wood is cut into regular dimensions, and these are combined with glass, plastics, rubbers, textiles are arranged into the geometry of the building. Land is consumed, as (at this point) most buildings are built attached to the ground. Underneath the layer of physical resources, energy is consumed, often in the form of electricity or petroleum, in the process of manufacturing, fabricating, and constructing. Then, there is an expenditure of human capital, whether workers at the steel mill, investors the project crunching numbers, designers designing, contractors carrying out the contract of building, or government officials inspecting for compliance.

Although when a project reaches “final completion,” the rapidity of building has slowed, it could be said that the building process continues in the form of energy consumption, maintenance costs, and eventually, repairs and renovations. In considering this, it becomes clear that a building is not a one-time creation of a handful of individuals with definite resources, but a long process of co-creation, which we could call resource flow.

Thinking in terms of the flow of resources, instead of merely the one-time consumption of resources, opens us to the positive side of the process- resource creation. A familiar, and contemporary example is a building with enough solar panels to supply its energy needs, and sometimes a surplus. But if we think of resource creation in terms of human capital, it’s easy to see how resource creation has always been a function of the process of building. A major product of building is increased productive capacity for human labor, through the means of shelter, protection, and organization of work and life.

Understanding building in terms of a continuous process of resource consumption and creation uncovers a vision of buildings that have life, and reveals countless opportunities for innovation and potential for good.
Yet another layer to the definition of building, one that’s interwoven with the process of resource flow, is the process of value realization. As noted, countless types of resources are consumed and created in the life of a building, but everything we listed in this category could be quantified: tons of steel, man-hours of effort, kilowatt-hours of electricity, etc. What about the non-quantifiable, often non-tangible things that the process of buildings consume and create?

Value usually corresponds with invisible qualities, but often can be related to, and defined by physical qualities. For example different resources are useful to us in different ways, which causes us to assign different value to them. These resources and their particular qualities gain meaning through how we value them, and thus the process of resource flow is animated by values. Building is a process by which values are physically realized.

“...resources and their particular qualities gain meaning through how we value them, and thus the process of resource flow is animated by values. Building is a process by which values are physically realized.”
An illuminating scenario the concept of value realization would be the decision-making process for choosing one building structural system over another. A five-story office building could be built with a concrete or a steel structural system. Each system has its own definite physical properties and histories and because of these material differences per se, each system will yield different possibilities for building. Concrete might allow for a thinner overall structural depth, but has more embodied energy than steel. The deciding factors between using one over the other, fall in the realm of value. Which is more expensive based on the location and market in which the project is located [economic value]? Are their municipal height restrictions (which place value on a certain shape of the city)? Is the project being built under evaluation systems such as LEED, which might preference whichever material could be obtained in close vicinity? Or perhaps the building developer values innovation, sustainability, and aesthetic warmth more than any of the aforementioned things, and chooses laminated timber over either steel or concrete!

A more abstract example would be the choice whether or not to demolish an inefficient, but historical property, to make way for a newer building twice the size. At a community meeting to allow the development plan to be enacted, individuals might weigh the value of culture, history, and personal importance embodied in the old building, against economic, energy-conserving and communal benefits of building a new one.

In defining a building as a tool, it was established that how we shape our environment mediates between us and the outside world in visible and invisible ways. Value, which is invisible, determines how and what we build, how we consume or preserve, create or destroy, invest in or divest from. In other words, value determines how we utilize resource flow to shape the world around us.
...what if we ask how the endeavor of building shapes everything around it?

Investigating this question replaces the notion of buildings as passive objects which outside forces act upon, for one of buildings as possible agents of change. This in turn requires considering the process of building’s effect on outside systems as part of its ethical content. Philosopher of design Vílem Flusser reasoned that all designed objects “are not just objective but inter-subjective as well, not just problematic but dialogic as well.” This has already been hinted at, in discussing how buildings can generate and export resources, or create value for third parties.

If we have already answered why we build, and how we build, looking at the building in terms of its location within, and potential to act within various networks, could be in answer to the question “where do we build?” For example, deciding where to build a grocery store might involve questions of transportation access, but it will inevitably shape transportation patterns itself. Deciding where to build a park might involve finding the best value for land, but it will also shape the value of the neighborhood where it is established.

The notion of “where” we build can be considered in a non-physical sense, as well. A building project has an economic “location,” utilizing labor and materials from specific markets, and not others. The success of a government’s investment in infrastructure has the potential to shape the “political landscape,” as it were. Every time we intervene in our environment, we are also participating in and effecting an ecology— with boundaries, pathways, and networks often invisible to us at first glance. The dialogical nature of built interventions means they have the potential to shape locations physically, economically, culturally, politically, etc.

“...what if we ask how the endeavor of building shapes everything around it?”
So far, we’ve briefly discussed ethics, logic, and design, and how they overlap; considered what current issues create ethical concerns relevant to practice; and explored an expansive concept of building. The final step in developing an approach to ethics in design is creating a framework for the design process to apply ethical insight to, and derive ethical insight from. We could refer to this framework in practice as design as ethical inquiry.

Design as ethical inquiry has two ends, the first of which is to improve the products of design. Ethical understanding can help improve the built environment, so ethical inquiry ought to inform practice of design in pursuit of better buildings and spaces for the people who use them, and encourage more fair and sustainable processes of building.

The second end of design as ethical inquiry is to apply design logic to forming, testing, and confirming ethical positions. Since design of the built environment constitutes logical processes of creating hypotheses that are tested through realization and research, design can be leveraged for ethical insight. As a result, this could inform both general ethical discourse, and discourse regarding the built environment.

It’s important to note that this framework is not new in practice. Many of the firms, organizations, and individuals referenced in this book have applied their efforts towards ethical environments and ethical insight, through many of the methods described. The purpose of labeling this approach design as ethical inquiry is to make it recognizable, reproducible, and more widely applicable as an approach to designing the built environment.
“If broadly, design is a logical cycle of discovering, guessing, and testing, then these activities could also serve as a basic framework for design as ethical inquiry.”

If broadly, design is a logical cycle of discovering, guessing, and testing, then these activities could also serve as a basic framework for design as ethical inquiry. To further specify these modes of design in terms of their function within ethical inquiry, I’ve labeled them as empathy, which relates to discovery, understanding, and asking questions, imagination, which is the capacity for and process of creating possible design responses, and evaluation, which is testing, re-understanding, and assigning value to design responses. Another critical mode of ethical design is negotiation, in which the complex relationship of duties and aspirations, empathetic understanding and imagined possibilities, are considered. Negotiation establishes the hypotheses to be tested and realized. To add to these four, participation is included, not as a part of the design process per se, but as an end of design in understanding building as a continuous process with an ongoing co-creation of the building.
Empathy commonly means the capacity or act of understanding someone else, especially in an emotional way. In its most basic application to design, we could take empathy to mean that the design process requires understanding someone else’s needs as well as we would understand our own. More specifically, and related to its emotional connotation, empathy is an identification with what moves other people (or non-human actors), that in turn, moves us in a similar direction. In terms of design as ethical inquiry, empathy is building understanding and establishing questions for design to respond to.

Empathy in the design process has been discussed extensively over the last two decades, and especially in the last five years. I recommend exploring different definitions of empathetic design process in design discourse, to understand the full spectrum of meaning the phrase can connote.1

Building Understanding

The most successful empathetic understandings in building design result from considering the functional context for a building, which is where the four layered definitions of building become useful. First, understanding why a building should exist is key in properly defining how it should exist, and sets up conversations about mediating and intersubjective functions. Often, out of the four definitions, understanding the “why” most directly involves considering the human context for building. This leads naturally into considering the values to be exchanged in the process of building. Next, understanding the context of resource flow, perhaps in terms of assets and opportunities, defines the bounds of how building can occur. Finally, understanding a building’s location within physical, ecological, social and cultural networks will define how a building might effect its context.

Empathy in ethical design is primarily concerned with setting the stage for inquiry; it could be seen as defining the right questions to ask, for the rest of the design process to respond to.

Asking Why

When we ask why a building should exist, we’re asking how it should mediate between its inhabitants and the outside world. Intuitively, a good building meets the needs and desires of its inhabitants;
4.1

However, empathy is something we must consciously and carefully approach because several other parties and systems are also at play. Design academia is responding to this charge of conscious empathy with projects that explore how to base design answers on contextual understanding of its subjects. Nikole Bouchard, assistant professor of University of Wisconsin Milwaukee, describes a project where students design all aspects of a dinner party, from the food menu and table layout, to the room, to the schedule, and even developing the character of the host. This project structure encourages reflection on an individual (in this case, the host’s) physical, psychological, and social needs, and unique narrative. Furthermore, it emphasizes the interaction of the individual to other individuals, to physical objects such as rooms and furniture, and processes such as food production and human socialization.

**Asking How**

Some of the clearest examples of empathetic design responses in practice can be found in disaster relief and rebuilding. Books like *Design Like You Give a Damn* and *Beyond Shelter: Architecture and Human Dignity* recount examples of efforts to provide temporary and long-term housing for those effected by natural disasters. The success of such projects are often determined by a comprehensive understanding of how they could be realized in the given context. In an example recounted in *Shelter: Architecture and Human Dignity*, a team from Emergency Architects Australia designed and prototyped replacement homes for one of the Solomon Islands after an earthquake hit there in 2007. The reported success of the design (and subsequent building of about 6,000) was attributed to a detailed understanding of physically and culturally what the houses should look like, what materials and skills were available to build the houses, and the larger ecological and societal challenges the earthquake brought on. The houses optimally used low-maintenance palm frond roofing and termite-resistant hardwoods instead of corrugated roofing and recycled softwood lumber, so the larger project also involved encouraging replanting indigenous trees to replenish and depletion that might occur from rebuilding efforts. These critical design decisions reveal a deep understanding of the resources and values at play in building in the particular context.

**Asking Where**

An empathetic understanding of a building’s location, ecologies, and place reveals how it could relate to these things. Within the architectural community, the works of Glenn Murcutt, Lake/Flato, and Rick Joy are consistently recognized for sensitively participating in their ecological and cultural contexts. These architects are associated with critical regionalism, as their projects aesthetically and ecologically convey a deep understanding of place. As a place-based approach to water infrastructure, landscape architect Kate Orff proposes absorbing storm water surges into New York’s harbors by implementing “oyster-tertecture,” a series of grids of oyster nets that will eventually grow into barrier reefs. Not only does this proposal leverage the potential of naturally occurring ecosystems to protect valuable land, it also engages the cultural histories of growing and consuming oysters through creating framework for community cultivation and harvesting. This type of synergistic, locally-inspired design response is only possible with an empathetic understanding of place.
world itself as the central character—Gaia. The anthropomorphic representation of something as huge and complex as a planet helps transcend the difficulties of relating scientific knowledge by encouraging the audience to empathize with the object. Artistic interpretations such as this one are sometimes necessary to help us understand where our buildings are located within, and thus how they can effect networks of ecology, place, and economies.

Scope

Understanding context relates to what already exists (what already “stands”), so the exact object of empathetic understanding will vary depending on when the design process in consideration begins. For example, an A/E firm may be hired to design a school after the site has been chosen, the program has been decided, and the budget has been set, so the context will include the implications of those decisions. In another example, a develop/design/build company might have more freedom to choose a site, budget, and even their target market, so empathetic understanding might start with economic, regional, and societal contexts.

Establishing Questions

Another function of an empathetic approach to design, beyond creating a deep understanding of context, is setting the trajectory for the rest of the design process through determining the questions to be answered with a design response. Alejandro Aravena, Pritzker Prize winning architect and founder of the firm ELEMENTAL, reasons in his 2014 TED Talk that the most important part of involving a community in the early process of design is “trying to identify with precision what is the right question.” In the context of Aravena’s early work with Chile’s social housing for families in slums, that involved realizing the inadequacy of existing housing schemes, and re-framing the question of how to build a whole house for an insufficient amount of money, into how to build the best “half of a house” with room for planned expansion. The resulting design allowed families to own a well-built, middle-class size home, something previous schemes hadn’t achieved. Alejandro finishes his thought by noting “There is nothing worse than answering well the wrong question.”
If empathetic understanding involves determining the questions for the design process to respond to, imagination involves uncovering and creating potential answers. In terms of the design process as our means of ethical inquiry, imagination is the practice of abductive logic, envisioning and generating hypotheses to be tested.

Abductive Logic

In his essay *The Designer’s Way of Seeing*, Vílemin Flusser likens designers to prophets, for their ability to see into the future which speaks of the designer’s capacity for imagination. Across the many disciplines involved in designing buildings, a common thread is this mode of imagination, whether that be the developer’s anticipation that building will be a good investment, or the engineer practicing foresight in designing a system against failure. Imagination is open ended: sometimes in the process of envisioning, additional possibilities are uncovered that may not fall into the scope of the original empathetic understanding and resulting questions, but that may be beneficial (or harmful) nonetheless, and therefore relevant. We could describe the products of imagination in terms of both quantity and quality, and generally, we apply specific imaginative techniques to increase the number, or the kind, or both, of available design responses.

The iterations resulting from imagination represent possible answers to what the building could be; however, starting with the “what” distracts from how a building functions. Instead, and in terms of building design as ethical inquiry, the territory for imaginative exploration should be the four layers describing the why, the how, and the where of building. Within the empathetically understood context, and having answered the “why” behind the building, how could it mediate between its users and the outside world? How could the building process be undertaken, and what are possibilities in terms of resource flow and value exchange? Finally, given a building’s physical, ecological, economic, cultural and societal locations, how could it act on these networks?
Vision—Optimism and Pessimism

It’s impossible to miss the optimistic undertones of the word imagination in context of designing buildings. Perhaps this is most evident in academia. Several design schools’ contemporary curricula emphasize the social, ecological, and technological impact of design, to such an extent that student projects approach the visionary, (while sometimes eschewing questions of building and realization altogether). A quick survey of thesis projects at the Bartlett School of Architecture,6 Harvard’s GSD,7 SCI-Arc,8 or Columbia’s GSAPP9 reveals a focus on the built environment’s ultimate potential. Despite differing positions and a myriad of theses’ focuses, these schools all acknowledge design’s tremendous potential to shape the world through expanding our understanding of what is possible in the built environment.

“... our interventions can also do great harm.”

The balance of the belief that we can shape the world in positive ways, is the acknowledgment our interventions can also do great harm. Optimism can only get us so far in imagining the impacts of what we design; moreover, it only considers the positive direction. In his essay Design: Obstacle For/To the Removal of Obstacles, Václav Kostka claims that “whoever projects designs for objects of use (whoever produces culture) throw’s obstacles in other people’s way, and nothing can be done about this (not even for example one’s intention to promote emancipation).” Matt Hall, assistant professor of architecture at Auburn University, created exercise to explore this notion, where students design the “worst case scenario” of dismal environments. The resulting designs commented on contemporary cultural issues, such as endless media saturation and societal unrest. This approach represents cynicism in contrast to many designers’ Save the World mentality, which uncovers the negative potential of building.

Critical design is another approach offering speculation as a basis for design exploration. In contrast to design optimism or pessimism, which free themselves from certain assumptions, a critical approach’s subject is the assumptions themselves. The term was originally coined by designers and New School design professors Anthony Dunne and Fiona Raby, but as they note, it is an “attitude” adopted by many designers in many forms. Although this approach naturally orients itself away from the more practical ends of design, it uncovers valuable possibilities of how a building can act on its context, and influence resource flow and value exchange. Ultimately, as Dunne and Raby state, the purpose of critical design is to “make us think.” Design possibilities imagined through critique, even if they’re impractical to implement themselves, can lead to more relevant and interesting built environments by exploring the validity of things as they exist; moreover, designing alternatives to what is assumed to be good perfectly aligns with the notion of design as an abductive form of ethical inquiry.

Vision—Optimism and Pessimism

It’s impossible to miss the optimistic undertones of the word imagination in context of designing buildings. Perhaps this is most evident in academia. Several design schools’ contemporary curricula emphasize the social, ecological, and technological impact of design, to such an extent that student projects approach the visionary, (while sometimes eschewing questions of building and realization altogether). A quick survey of thesis projects at the Bartlett School of Architecture,6 Harvard’s GSD,7 SCI-Arc,8 or Columbia’s GSAPP9 reveals a focus on the built environment’s ultimate potential. Despite differing positions and a myriad of theses’ focuses, these schools all acknowledge design’s tremendous potential to shape the world through expanding our understanding of what is possible in the built environment.

“... our interventions can also do great harm.”

The balance of the belief that we can shape the world in positive ways, is the acknowledgment our interventions can also do great harm. Optimism can only get us so far in imagining the impacts of what we design; moreover, it only considers the positive direction. In his essay Design: Obstacle For/To the Removal of Obstacles, Václav Kostka claims that “whoever projects designs for objects of use (whoever produces culture) throw’s obstacles in other people’s way, and nothing can be done about this (not even for example one’s intention to promote emancipation).” Matt Hall, assistant professor of architecture at Auburn University, created exercise to explore this notion, where students design the “worst case scenario” of dismal environments. The resulting designs commented on contemporary cultural issues, such as endless media saturation and societal unrest. This approach represents cynicism in contrast to many designers’ Save the World mentality, which uncovers the negative potential of building.

Critical design is another approach offering speculation as a basis for design exploration. In contrast to design optimism or pessimism, which free themselves from certain assumptions, a critical approach’s subject is the assumptions themselves. The term was originally coined by designers and New School design professors Anthony Dunne and Fiona Raby, but as they note, it is an “attitude” adopted by many designers in many forms. Although this approach naturally orients itself away from the more practical ends of design, it uncovers valuable possibilities of how a building can act on its context, and influence resource flow and value exchange. Ultimately, as Dunne and Raby state, the purpose of critical design is to “make us think.” Design possibilities imagined through critique, even if they’re impractical to implement themselves, can lead to more relevant and interesting built environments by exploring the validity of things as they exist; moreover, designing alternatives to what is assumed to be good perfectly aligns with the notion of design as an abductive form of ethical inquiry.

Vision—Optimism and Pessimism

It’s impossible to miss the optimistic undertones of the word imagination in context of designing buildings. Perhaps this is most evident in academia. Several design schools’ contemporary curricula emphasize the social, ecological, and technological impact of design, to such an extent that student projects approach the visionary, (while sometimes eschewing questions of building and realization altogether). A quick survey of thesis projects at the Bartlett School of Architecture,6 Harvard’s GSD,7 SCI-Arc,8 or Columbia’s GSAPP9 reveals a focus on the built environment’s ultimate potential. Despite differing positions and a myriad of theses’ focuses, these schools all acknowledge design’s tremendous potential to shape the world through expanding our understanding of what is possible in the built environment.

“... our interventions can also do great harm.”

The balance of the belief that we can shape the world in positive ways, is the acknowledgment our interventions can also do great harm. Optimism can only get us so far in imagining the impacts of what we design; moreover, it only considers the positive direction. In his essay Design: Obstacle For/To the Removal of Obstacles, Václav Kostka claims that “whoever projects designs for objects of use (whoever produces culture) throw’s obstacles in other people’s way, and nothing can be done about this (not even for example one’s intention to promote emancipation).” Matt Hall, assistant professor of architecture at Auburn University, created exercise to explore this notion, where students design the “worst case scenario” of dismal environments. The resulting designs commented on contemporary cultural issues, such as endless media saturation and societal unrest. This approach represents cynicism in contrast to many designers’ Save the World mentality, which uncovers the negative potential of building.

Critical design is another approach offering speculation as a basis for design exploration. In contrast to design optimism or pessimism, which free themselves from certain assumptions, a critical approach’s subject is the assumptions themselves. The term was originally coined by designers and New School design professors Anthony Dunne and Fiona Raby, but as they note, it is an “attitude” adopted by many designers in many forms. Although this approach naturally orients itself away from the more practical ends of design, it uncovers valuable possibilities of how a building can act on its context, and influence resource flow and value exchange. Ultimately, as Dunne and Raby state, the purpose of critical design is to “make us think.” Design possibilities imagined through critique, even if they’re impractical to implement themselves, can lead to more relevant and interesting built environments by exploring the validity of things as they exist; moreover, designing alternatives to what is assumed to be good perfectly aligns with the notion of design as an abductive form of ethical inquiry.
4.2

Generating Hypotheses

Innovation is perhaps the chief aim of actively expanding imagination, as a new problem, or an old problem without a good solution usually requires a new response. Although the most innovative or novel design response to a problem may not ultimately be the right one, seeking innovation towards a certain goal often uncovers possibilities outside of what is already known, and the more possibilities uncovered, the higher probability for success. Within the design process, iteration is one of the primary vehicles for expanding the quantity of potential answers. Iteration could be approached as either layering on additional ideas to a primary design idea, or could involve inventing several unique ideas, or somewhere in-between.

Available technologies have greatly expanded the horizons of iteration. Computer modeling especially empowers designers to create iterations in greater quantity, in greater detail, and with increased speed. In most basic form, these expanded capacities come through the designer’s ability to instantly copy, paste, and modify iterations. In more sophisticated approaches, parameters can be set up to help generate possibilities—parametric design.

The concept of open source is another technologically enabled expansion of imagination, which seeks to collectivize design and technical knowledge. Optimistically, open source reveals new possibilities and empowers designers beyond their intrinsic abilities and knowledge. Furthermore, open source enables people without previous design experience to exercise a new level of design agency, potentially enabling them to respond to their own problems directly. Open Source is innovative in terms of access and depth of design knowledge, but the collective imagination has always been a primary source of design possibilities. What open source seeks to make explicitly available, designers have always discovered implicitly through mediated (that is through drawings, photographs, and written descriptions) and unmediated (in-person) experiences of the built environment. Precedence is the original “open source”, as a sort of a historical form of collective imagination, where iterations readily exist for consideration. Sometimes, the best possibilities exist in this realm of what’s already been created, as opposed to the realm of novel ideas. For example, architect Hassan Fathy recounts in his book, ...

“...designing alternatives to what is assumed to be good perfectly aligns with the notion of design as an abductive form of ethical inquiry.”
Architecture for the Poor, how he helped create less expensive, more durable, less energy intense, more economically integrated, and overall more attractive houses for Egyptian government’s public housing project in New Gourna, by utilizing historical and traditional methods and designs rather than modern concrete construction.14

**Expertise + Creativity**

If building designers are thought of as experts, then expertise also supports the process of imagining. Expertise overlaps with precedence, as expertise is collectively built on accumulated knowledge and past experiences. If abductive reasoning starts with a sort of educated guess, then expertise is often the “education” directing the guess. As this implies, expertise is often based on education, and usually represents a specialized knowledge, of which the building and design industries have multiple types.

Imagination speaks to the creative nature of building design, aligning it with the arts. Especially helpful in inspiring imagination in the process of design as ethical inquiry are the literary arts, for their emphasis on creating meaning. Narrative can become a framework for creating new possibilities around the uniquely human activity of storytelling. A story implies motion, which is useful in understanding how a building could draw its form from the processes used to shape it (i.e. resource flow and value exchange). Narrative is especially effective at relating humans and their various contexts in similar terms, establishing them as actors and exploring their specific relationships to one another, giving things life that may not be literally “alive.” Analogy is another helpful literary device, uncovering parallels and overlap in functions in the built environment, which result in increased value. For example, the Esplanade at the Parc Del Forum in Spain has a giant solar panel array that doubles as a sculptural canopy. Whether the original design idea was about exploring the parallels between solar arrays and trees, or solar arrays and a pergola, the structure creatively overlays functions of infrastructure, architecture, and art, thus generating electricity and establishing a distinct, usable place simultaneously.

4.2

*... designers have always discovered implicitly through mediated and undmediated experiences of the built environment.*

**Medium**

In addition to discussing approaches to imagination (optimism, pessimism, critique), or techniques (iterating, studying precedence), it’s worthwhile to revisit medium’s effect on imagination. Designers have traditionally utilized various media for different types of explorations, from graph-paper calculations, to two-dimensional drawings, to three-dimensional models, to full-scale mock-ups. Technology has taken the types of explorations into the digital realm, where inputs vary from three-dimensional sculpting to data entry and coding, resulting in outputs ranging from data readouts to immersive virtual reality environments. One could elaborate volumes on the advantages and disadvantages of any given medium. For the purpose of this discussion, suffice it to say different media lend themselves to solving different problems, which can be leveraged to strategically focus or broaden imagination in the design process.
Negotiation is the act of resolving imagined possible responses within the bounds of empathetic understanding; if empathy is about understanding and establishing design questions, and imagination is generating potential answers to these questions, negotiation would be deciding the best answers to test further or realize. As the common usage of the word implies, negotiation involves reconciling competing constraints and ideals with possible responses into a singular direction forward. Within the practice of design as ethical inquiry, these constraints and ideals are ethical in nature. Therefore, negotiation describes a process and an end: it is about considering possible outcomes within an ethical framework for the purpose of identifying answers as hypotheses to test through realization.

**Belonging**

We should first consider the outcomes of a building based on how it is located within, and belongs to different parties and networks. Belonging to something implies relationship, potential effect, and therefore certain implied duties and obligations. Each of these locations of a building—whether a city, an ecology, or the whole of humanity—involve duties, obligations, and potential effects that design responses must take into consideration.

The location of a building can be imagined in successively broader concentric circles, starting with those closest and most specific to the project, towards those less specific and more broadly encompassing. The most specific party to consider might be the people directly utilizing the building—the users. The design process typically takes the users (real or imagined) into primary account during the design process, understanding how to shape their experience. The building designer usually has certain obligations to building users, whether legal (as architects must protect the “life, safety, and welfare” of occupants), or implied (the general understanding the design should accommodate occupants as well as possible.) Sometimes, the user overlaps with the client, to whom the building designers have a contractual relationship, a type of explicit promise establishing certain duties.
The people who directly use the building belong to a larger community; by extension, the building is located within the network of a neighborhood, a city, region, or society, affecting their economies and identities. A building becomes part of its environment in a very physical way as well, participating in the urban fabric of a city, or the surrounding ecology of a waterfront, or the landscape of countryside. On an even larger scale, a building could belong to states and countries, and then eventually to the whole world, in both the ecological and human dimensions. Although a single intervention in the environment may appear to have little effect on its contexts, in aggregate, the endeavor of building has a considerable effect.

This results in guidelines, standards, and laws to help protect communities and ecologies from the negative effects of building; it can also lead to a sense of responsibility to these larger networks, despite having less of a direct connection to them. Beyond the physical realm, a building belongs to beliefs and ideals, whether religious or non-religious philosophies or worldviews. For example, a church building might belong to a specific Christian tradition, which implies how the building should be oriented, how it should represent itself to the community, what kind of spaces it should have, and the quality these spaces should achieve. Built interventions can potentially embody the ideals and beliefs of their contexts.

**Ethos**

We must carefully consider possible outcomes within this capacity of buildings to embody ideals and beliefs. Buildings are a physical manifestation of the ethos of their creation, expressing the aspirations of their creators, effecting parties and networks to which they belong, and projecting design intentions into the future. We could start by asking to what extent possible outcomes reflect the value of creators and users. For example, how does the design for a high school could express the values of its community through embodying a local aesthetic and creating spaces for activities important to the community?

Buildings as physical objects have a (potentially long) lifecycle, so it’s important to consider how the embodied ethos will project into the future. The energy systems for a building could be designed to accept-able standards based on current guidelines, for example, but how will these systems measure up in fifty years? In this way, buildings can be aspirational, actively shaping the ideals and beliefs, embodying what its creators and users desire to be in the future.

Negotiation is a process to resolve the way a design answer responds to ethical concerns, but it can also becomes means of revealing ethos and corresponding ethical assumptions. As design answers are resolved through negotiation, they become more tangible, visible expressions of abstract values. For example, a townhome development built with shoddy construction techniques might reveal that the developers value only the project’s short-term financial potential, while ignoring the long-term value as an investment in the community. As a positive example, a client allocating funds for researching alternative energy sources conveys their concern for sustainability. The further design decisions are realized, the more the underlying ethos is clarified.

**Benefit**

Thinking of building as a process of resource and value flow begins to illuminate whom or what a project benefits, to what extent and at what cost. Carefully considering how the resources needed to build a building shape ecologies and economies reveal how a building can be strategically realized to reduce harm and create good through the inputs of resource and value flow. On the other end of resource and value flow, we can think about how to reduce harm and create good in the outputs of building. Designing for reduced energy consumption, increased occupant wellness, and increased community vibrancy are examples of benefits in the output of a building.

In addition, we could think of the scope of good created as internal or external to those investing in the building. As an example, some humanitarian projects utilize donated time, expertise, funds, land, and materials to realize a project, so all of the benefits they produce could be considered external to those investing. However, most interaction with and intervention in the built environment, whether constructing a building or leasing space or land, is invested in by those who will directly benefit in some way. In this typical scenario, it’s important to think about how the process building could offer external as well as internal benefits.
Although some of the variables involved in resource and value flows are hard to quantify, we could think of creating good in these processes as kind of equation by which we could optimize the outcomes. This approach is analogous to cost/benefit analysis, where the success of a solution is measured as a balance of the two; it also closely resembles the utilitarian approach to ethics.

Justice

The outcomes of building could also be examined in terms accomplishing justice. A standard of justice can transcend legal constraints, including concepts of reciprocity, equality, and social norms. According to philosopher John Rawls, who thought and wrote about ethics in terms of society and justice, discovering what is just involves thinking from somewhat of an objective viewpoint, from the position of an "ideal observer." Although designers typically act in best interest of the client, they have the potential, and often an obligation to speak from an objective viewpoint. For example, an architect or engineer has an obligation to be as realistic and accurate as possible in developing a cost estimate to inform the client. Just as buildings function well as a financial asset when the design process takes into account fiscal responsibility, buildings can become a social investment if design takes social responsibility into account. Similar to the objective function of developing a cost estimate, designers could take on the role of informing the client of the social implications, positive and negative, of certain design decisions.

A standard concept for measuring social responsibility is the social contract, which ethicists define as a tacit, implicit, shared understanding of morality. Societies differ in their agreed upon rules, and designers should be aware of what they are, how they apply to the built environment, and what ways the realization of a building may conform to or violate the shared understanding of right and wrong. Within the implications of a social contract, the design of a project that technically complies with the law, could in some other way be considered unethical. For example, the existence and identification of food deserts—areas of cities devoid of access to fresh, healthy food—is a shared idea of a social wrong without corresponding legal definitions. Grocery stores aren't breaking a law by not opening stores in certain (usually impoverished and underserved) neighborhoods, but
Designers can proactively respond to issues of equality by considering how different people have unique needs and experience spaces differently.

Reciprocity and equality are foundational in social justice, and physical environments can play a large role in shaping these qualities within society. The Americans with Disabilities Act is a large-scale example of an innovation in thinking about the social justice of building. ADA was legislated in response to the lack of equal access to public goods and services in the built environment, and resulted in increased access and increased awareness of how buildings can accommodate a diversity of people. Designers can proactively respond to issues of equality by considering how different people have unique needs and experience spaces differently. In addition, designers can be conscious of social issues relevant to building in general, and to specific typologies. As an example, the contemporary movement seeking to move criminal justice system towards a rehabilitative focus has been reinforced by corresponding research and design solutions by architects and engineers.

Expertise and Agency

The basis for negotiation is a careful consideration of the ethical nature of possible outcomes, and its result is identifying which design answers to realize. As building design is an iterative process, negotiation happens at several different points; therefore, realization could be any decision requiring commitment and investment, from creating a model for further investigation, to full construction of the building. Depending on the specific project structure, the designer will have differing degrees of agency of decision making in relation to the client.

Design professionals often function as expert advisors, so in negotiating design decisions, this also applies. The object of the expert advisor is educating the decision maker (usually the client) so their decision will be well-informed. In this role, communication is key to successfully making a decision, as building designers must convey the potential effects of decisions based on their expert understanding of the processes of building.

All designers bring their own ethical commitments to the table, and sometimes designers leverage their expertise to advocate for their own ethical positions in making decisions. For example, a designer may advocate for a building that is energy efficient beyond the legal requirements, because they believe in the importance of energy conservation. Or, an architect who believes strongly in the sanctity of life might advocate for a safety protocol in a country where worker deaths are high, despite the country’s own ambivalence to the issue. We could label those designers committed to realizing projects located within very specific ideals as activist designers. Often, designers brand themselves with certain ideals, and potentially become sought after for their commitment and related expertise. Other designers expand their role to gain increased agency in the decision making process, so negotiation is more in the context of their own ethical frameworks. Another type of expanded practice capitalizes on designers’ expertise to become effective in roles beyond those of a typical practice. Each of these expansions of practice give the designer more agency in making decisions, and thus a more powerful role in negotiation.
Carefully considered, imaginative design responses generated from empathetic understanding are the bases of creating good buildings and useful ethical insight. If these good buildings are to succeed in the long term, they must account for the participatory capacity of the built environment.

As tools, buildings mediate between us and the world around us, but without activating, maintaining, and re-shaping buildings with human activity and resources, buildings fail to function as intended. Similarly, buildings themselves are inert as ethical agents, instead carrying the intentions of their creators, users, and occupants. Participation relates to the ability of building users to exercise agency in engaging and shaping their environments; moreover, it relates to a dialogue between building users and ethical intentions. In terms of design as a form of ethical inquiry, designing for participation acknowledges the co-creative nature of buildings, and helps embed the ethos of the building within its use.

Co-Creation

Buildings are co-creative in that they require continual participation to carry out their function. We light modern buildings with electricity, as we did in the past with gas lamps. Every building has needed repair from the wear of the elements, or renovation in order to stay useful. Beyond the supply of energy and the application of resources, buildings require human activity to complete their purposes, so an empty or unseen building is considered incomplete. Energy, resources, and human activity participate in the built environment to activate its form.

In contemporary practice, the terms participation, or participatory design, connote involving those affected by a building project in the design process. This recognizes two things. First, that designs ought to synthesize professional expertise with contextual knowledge, and second, that people can more effectively use buildings if they help define the conditions for building. It’s also important to note that humans have always, and will continue to successfully shape their own environments before and without the involvement of professional designers. Participation as a design goal recognizes that regardless of the involvement of a professional designer or lack thereof, buildings...
are not the result of a single creative act, but a continual co-creative, symbiotic process.

The most apparent form of participation in the built environment is exerting physical control over one’s environment. Initial construction of a building represents the greatest physical change in its existence—from a mere intention into a tangible form. Traditionally, construction often involved individual owners, families and whole communities, connecting them in a very real way to their physical environment. The practice of barn raising is an example of family-initiated communal construction based on shared knowledge and common needs. In a contemporary, urbanized setting, where building is carried out by specialty trades, some building practices have recovered the notion that participation in construction creates a special connectedness with the built environment. Habitat for Humanity chapters and other social housing programs often require benefactors to contribute a certain amount of “sweat equity” towards building their homes. This helps make the building more affordable for residents, and creates a deep sense of ownership in their environment.1


Beyond the process of construction, we adapt our buildings to mediate between us and our physical environment in specific, purposeful ways. Buildings usually exhibit adaptability in various immediate ways, such as operable windows and screens, manual doors, removable awnings, etc. Energy utilization in the 20th and 21st centuries has revolutionized the ways in which we can control the physical characteristics of our built environment. In exchange for increased effectiveness, these modern adaptive technologies often obscure their operative processes through the physical hiding of equipment and the disafflicting complexity of systems. In contrast to this tendency, contemporary architecture practice Olson Kundig explores the experiential possibilities of analogue environmental control through their projects’ inclusion of large operable doors and windows powered by wheels and hand cranks.1 This kind of celebration of hinges, gears, and pulleys could be one way of engendering a sense of direct connection with one’s environment in addition to providing environmental control.

Lifecycle

Thinking about the participatory nature of the built environment naturally intersects consideration of the life cycle in terms of maintenance, replacement, and environmental costs, and with concern for those who use the building or space immediately or in the future.1

Lessening the initial impact of building through conservation of resources and environments by utilizing existing buildings, sites, and materials, comprises one way to approach lifecycle design. Often, this involves noticeable interventions that help occupants understand the conservational nature of the built intervention, from something as practical as re-using existing window, to something as aesthetic as restoring an old brick wall. Re-using individual building components and new products with recycled content also play a role in this approach. Renovation and reuse, in addition to having a positive impact ecologically, are full of opportunity to inspire thoughts and dialogue about the of the beauty and goodness in conservation more generally.

“... some building practices have recovered the notion that participation in construction creates a special connectedness with the built environment.”


Lifecycle

Thinking about the participatory nature of the built environment naturally intersects consideration of the life cycle in terms of maintenance, replacement, and environmental costs, and with concern for those who use the building or space immediately or in the future.1

Lessening the initial impact of building through conservation of resources and environments by utilizing existing buildings, sites, and materials, comprises one way to approach lifecycle design. Often, this involves noticeable interventions that help occupants understand the conservational nature of the built intervention, from something as practical as re-using existing window, to something as aesthetic as restoring an old brick wall. Re-using individual building components and new products with recycled content also play a role in this approach. Renovation and reuse, in addition to having a positive impact ecologically, are full of opportunity to inspire thoughts and dialogue about the of the beauty and goodness in conservation more generally.

“... some building practices have recovered the notion that participation in construction creates a special connectedness with the built environment.”
Another approach strives for built interventions that stand the test of time through resilient systems and durable materials. Lifecycle cost analyses often reveal that strategically investing in building quality will result in lower operational and maintenance costs, representing a higher eventual return for the initial costs and effort. Building for longevity affirms that building does have a large impact on the world around us, and eschews the idea of a building as a consumable. The antithesis of this approach is apparent in the rapid development of poorly-built, high-priced real estate in growing cities, which serve their initial purpose of reaping a high return for their developers at the cost of long-term integrity. In this scheme, the eventual building owners, occupants, and neighbors are saddled with depreciation and ongoing maintenance, and excluded from participating in the (financial) successes of the building project. Designers focusing on the principles of co-creation and participation should instead conceive of buildings as a tool for improving quality of life, economic mobility, community stability and environmental quality.

Instead of striving for longevity, some built interventions have their disassembly accounted and planned for in their design. Shigeru Ban, a Pritzker Prize winning architect is well known for his projects utilizing cardboard tubes especially post-disaster situations, such as his “Paper Log” relief housing in Japan after a 1995 earthquake, and his temporary chapel in Christchurch, New Zealand. The cardboard is cheap, lightweight, easily assembled and disassembled, made of recycled material, and potentially recyclable post-use. Instead of resisting change, buildings like Ban’s cardboard cathedral and housing acknowledge their own transience and tread as lightly as possible on the upfront investment and the environmental cost through planned disassembly.

A useful midway point between longevity and transience is the approach of flexibility. To maintain the utility of a building, the principle of flexibility allows some components to be fixed and other to be more malleable. For example, in their design for Nike’s European headquarters in Hilversum, The Netherlands, William McDonough Partners planned for long-term flexibility by creating office space that could easily be converted into housing in the future, increasing both the project’s utility and its potential lifespan. More commonly, this approach is visible in movable partitions, large sliding doors, and modular furniture found in many contemporary workplaces and classrooms, and the division between core and shell elements in commercial buildings.

Visibility

The built environment has the capacity for information, or in other words, the ability to speak to and effect us. An intentional purpose of information could be to teach or reveal something about a building’s ethos. Architectural firm Skidmore, Owings and Merrill’s design for a Staten Island, NY elementary school expresses its net-zero energy performance visibly, resulting in a didactic experience for its occupants. The Kathleen Grimm School for Leadership and Sustainability at Sandy Ground is wrapped in photovoltaic panels on the roof line and down its south side, both optimizing surface area for solar collection, and displaying its primary source of electricity. Windows and Skylights are framed with bright colors, and ceilings are sloped towards apertures, calling attention to daylighting. Interactive dashboards will display energy consumption and weather data, further informing students and teachers about building performance and environmental connection. The school’s aesthetic expression conveys its ethos, specifically the unique way it reduces energy consumption. By making its occupants aware of, and thus active participants in the building’s resource flow, the design has the potential to change their behavior in relation to energy consumption and sustainability.
The form of buildings can embody certain ideas and values, functioning as a type of language. One obvious kind of visual language in the built environment is wayfinding and signage, which helps us locate ourselves, and directs our movement. There are countless less obvious ways in which buildings effect our relationship to them, ranging from appeals to conscious thoughts, to changing our emotions and behaviors subconsciously. In his book *Places of the Heart*, Collin Ellard recounts his research into how visibly different environments subconsciously effect our psychophysical states. Specifically, some of his experiments illustrate how streetscapes with a rhythm of excitement and presence of activity engages the observer’s mind in way to create less stress than when experiencing a monotonous building façade.6

Within the conscious realm, the built environment functions as a visual expression of culture and identity, physically recording values important to a society or an individual. We learn about cultures past by the physical artifacts they left, and gain insight into the lives of people around us by analyzing the places they inhabit.

**Affection**

A crucial element of designing the built environment, yet one rarely discussed in depth or with academic rigor, is the goal of creating places that people like, are happy in, and talk affectionately about. In his book *The Architecture of Happiness*, popular thinker and writer Alain de Botton notes that when find a space or object happy or enjoyable, “we have come upon a material articulation of...our ideas of a good life.” De Botton expresses the sentiment that we have the capacity to resonate with, or inversely, be put off by our environments and possessions.7 We like to feel as if we’re living up to, and harmoniously with our ideals, and we like to express these ideals to others. In thinking through the co-creative dialogue inherent in the built environment, this could work two ways: It is indeed important to design places that people easily identify with, but there is additional potential in designing places that push people towards new ideals. The New Urbanist movement in city planning, for example, relies on traditional neighborhood structures and sometimes traditional building aesthetic to help recover neighborly interaction and lessen ecological impact. This cleverly leverages familiar and nostalgic elements to include residents in strategies for solving current ecological and energy challenges.8

---

Another dimension of affection for our built environment has nothing to do with the shape or function of that environment per se, but in the associations we make with places. Both our best and our worse memories are often accompanied by a distinct sense of where we were. Likewise, we tend to fondly think of places associated with positive experiences, and poorly think of places associated with negative experiences. Of course the design of a space has limited bearing on the nature of any particular experience, and any given space doesn’t garner the same types of memories for everyone. However, it suffices to say that designers generally ought to design spaces oriented towards positive and authentic experiences, and thus, good memories.

Lastly, it should be noted that affection for the built environment inevitably plays into life cycles. Places that people love will be places they care for, meaning they will serve their users better, and for a longer time; the reverse is true as well.

Safety

Foundational to the previous two goals of creating spaces that dialogue with ideals and encourage good experiences, is the requirement that spaces feel, and are actually safe. Humans have always built for safety, from dwellings elevated to avoid predators and flooding, to walled hill towns that were easily defendable. A well-known entry in subject of safety in context of cities and modern development is Oscar Newman’s *Defensible Space*, which explores the Pruitt Igoe housing projects in St. Louis and their eventual demise. Despite its somewhat disputed conclusions, *Defensible Space* does bring to the fore the potential of space to keep us, and make us feel safe. Colín Ellard elaborates on this in his book *Places of the Heart*, naming privacy and control as two major factors for psychologically supporting the feeling of being “at home.” Abraham Maslow’s conception of the hierarchy of human needs places physiological and safety as primary to meeting other needs, which reinforces the idea that feeling safe is basic to positively experiencing, co-creating and otherwise participating in the ethos of a space.
Evaluation is the conclusive mode of design as ethical inquiry. Negotiation determines imagined design responses as hypotheses, but these hypotheses must be tested to fully understand the value of the building and the effectiveness of the design process. Evaluation considers the data resulting from the design process, in finalized or iterative form, and applies inductive logic to form conclusions. In terms of ethical inquiry, evaluation is the process of re-understanding the project and assigning it value, so it becomes useful in contributing to future design processes and conversations about the built environment. Evaluation may or may not employ formal research, but either way, it involves both gathering and analyzing data which lends credibility to, or convinces us to reconsider our hypotheses.

**Re-Understanding**

Evaluation mirrors the process of empathy in the beginning of the design process; it is a form of re-empathizing, or forming a deep understanding of the implications of a finalized product. In evaluation, the designer considers a holistic design or individual design decision, in fully realized or modeled form, as a hypothesis to be tested, from which conclusions to be derived. Constructed, inhabited buildings and more abstracted models each have their strengths and weaknesses as the objects of evaluation, but for either, the ends of evaluation are similar. First, both quantitative and qualitative types of data describing building’s performance are gathered. The data could consider any of the functions or processes of building identified and the four layers of definition, from how the building’s energy systems perform, to how its construction utilized resources, to how it has impact on a local economy. This data is then compared to the questions asked earlier in the design process to determine if the design decisions made adequately answered them. Beyond that, the data can be submitted to external evaluation systems, such as certifications and industry conversations. Ultimately, these comparisons help us draw conclusions about our processes and their outcomes, resulting in improved design process and ethical insight.

“... [evaluation] involves both gathering and analyzing data which lends credibility to, or convinces us to reconsider our hypotheses.”
Modeling

Models are abstracted versions of design decisions useful for observing or testing, created in digital, physical, or numerical forms. Advantageously, models typically require a lower investment than a fully realized building projects, and often can be created quickly as iterations to be tested side-by-side. On the other hand, evaluation models necessarily present a narrow or incomplete picture compared to analysis of a fully realized project. A more complete conversation about different types of models and approaches to evaluating them is worth having; however, for this discussion, it suffices to advise considering both the benefits and limitations of assigning value through modeling.

Realized Project

Evaluating a fully realized project incorporates all of the complexities and unforeseen factors of building in the physical environment. Both soft and hard data about a buildings actual functions are crucial to successfully evaluating a project’s success. The most basic way for building designers to evaluate how a project functions is by in-person observations. This approach is both the most direct and the most subjective. It is also perhaps the most foundational, as it allows building designers to experience the outcomes of a project firsthand and beyond of the abstractions of theoretical understanding and the design process. Post-occupancy surveys and interviews are a common way to collect soft data within a structured framework, focused on the building occupants and users. Analyzing information from post-occupancy surveys and interviews helps us understand how people interact with and perceive the project. Both of these methods rely on experience and perception, which tend to relate to qualitative aspects of the built environment.

Quantitative data allows us to precisely evaluate the built environment based on both information we perceive and information we don’t perceive. Commissioning services, for example, besides improving building performance, also provide insight into and data for how building systems function in real circumstances. With new methods of data collection involving sensors and analytic software rapidly becoming available, services around building data collection are emerging, which could yield beneficial data to both clients and building designers alike. DLR Group architects Ryan Cameron and Michael Vander Ploeg have researched the potential of real-time data collection by measuring power consumption of office workstations through point-of-consumption sensors. This research, entitled Data Streams, creates insight into how workers use power individually, and how power loads function in aggregate. In addition to testing and analyzing physical environment characteristics in themselves, psychologists and sociologist have started using sensors alongside surveys to increase their understanding of how spatial characteristics effect people. Among those popularizing this approach, Collin Ellard has conducted experiments to test psychological and physiological reactions to different streetscapes.

Assigning Value

In the context of evaluation, the primary purpose of re-understanding a building project through analysis of qualitative and quantitative data is, as the word “evaluation” starts to suggest, assigning value. If we understand ethics in G.E. Moore’s terms, as a “general inquiry into what is good,” then design as ethical inquiry would end in an assessment the processes and products of design in terms of how good they are. The approach by which we assign good could take many shapes, perhaps mirroring one of the major schools of ethics—virtue, duty, utilitarian, justice—but most basically, it should focus on how well the project answers the questions established as a part of empathetic understanding.

Evaluation Systems

There are several existing systems for doing this. The implications of liability for practicing architecture, engineering, and many building trades, along with building codes and municipal restrictions, form a legal system of evaluating the built environment. Failing to achieve a certain value in terms of the law of course has negative consequences, which incentivizes adhering to the values it established. In addition to coercively enforcing good practice, legal systems also signal the probability of success or failure in terms of health, safety, welfare, and other public goods. Other types of evaluation systems are voluntary, and focus on positive reinforcement. For example, the LEED rating system quantifies how well a building performs in terms of energy a
environmental concerns, assigning points that build toward designations such as LEED Gold or LEED Platinum. Several other certifications recognize achievements for a variety of benefits, including GGP, which covers similar ground to LEED, WELL for occupant wellness, and SEED for positive social impact, to name just a few. Despite different focuses, each follow a similar template of converting facts about the building into a measure of how “good” it is in regards to certain types performance. In addition, by establishing standardized levels of achievement, these systems provide a way to comparatively evaluate built projects—in other words, not only establish a measure of good, but establish a sense of better. These collaboratively organized rating systems play an important role in assigning value, especially value that becomes understandable to other building professionals and, optimistically, the general public. Through incentivizing good outcomes and creating understanding, rating systems also help perpetuate certain values and thus shape how we approach the endeavor of building.

Internal assessments are another possible approach to measuring the good of a building project. Because external assessments are collectively generated and understood, they may limit the full extents to which an individual or organization wants to explore evaluating the built environment. For this reason, designers ought to consider creating their own types of evaluation based on what types of outcomes they value, toward whom they think their professional efforts should be directed, and what kinds of impacts matter most to them.

Evaluating Process

From the building designer’s perspective, it ought to be just as important to evaluate the design process itself, as it is to evaluate the products of that process. Understanding the effects of the design process on the end results can improve future design processes. After assigning value to a project in relation to its outcomes, designers can begin to ask what lead to those outcomes, how the design process succeeded or failed to reflect important principles identified in empathetically understanding the design problems, how well ideas were implemented, what challenges arose, and other questions examining the process. A designer could the five modes of design as ethical inquiry as a framework applying these questions to a specific project.
Discourse: Engaging the Larger Conversation

Without cohesively understanding how well a project performs, it is impossible to talk about it in a meaningful way. Assigning value creates meaning. Therefore, in terms of design as ethical inquiry, evaluation becomes the basis of engaging in and contributing to larger conversations around ethics and the built environment. These conversations could be between building professionals through design and building publications such as blogs, magazines, and trade publications, or more formally, research journals. They also may engage professionals outside the building professions. For example, through cross-disciplinary research or publications outside the field. And finally, these conversations could be aimed at helping the general population to understand the connection between the built environment, ethical questions, and good outcomes.

Design of the built environment in practice requires special insight into human and ecological systems, for which a unique body of knowledge and understanding exists. This lends building designers credibility to participate in and shape ethical discourse regarding human life and ecology outside of the normal scope of the built environment disciplines per se, instead of passively receiving and reacting to the ethical conclusions of other parties. Several points will establish the legitimacy of designers taking a larger, more active role in ethical discourse.

First, humans on average spend most of their time in environments that are in some way designed, whether walking on a street, working at an office, relaxing in a home, or cultivating a garden. Therefore, we as designers are in many ways responsible the very shape of peoples’ lives. As a part of designing the best environments we can, ought to use our knowledge to make humans’ lives better.

Secondly, there are direct relationships between intangible ethical and philosophical concepts and physical existence, namely the built environment. Just as humans can express relationships, emotions, and beliefs through body language, cultures can express their values, goals and beliefs through their physical artifacts, and specifically through buildings, cities, and cultivated land. For this reason, the contexts of ethical conversations are often architectural, environmen-
Finally, philosophers, politicians, artists, and public figures have consistently acknowledged how the built environment constructs our individual and shared identities. Aristotle believed that cities are essential to achieving an individual’s ultimate purpose, as a city is the physical manifestation of human virtue and partnership.9 Winston Churchill famously said “first we shape our buildings; thereafter they shape us,” specifically referring to the Commons Chamber’s effect in defining the United Kingdom’s parliamentary system, and broadly affirming the sociological effect of environments.10 Countless musings on the built environment exist within popular culture, as well. In one most seminal and popular hip-hop songs of all time, Grandmaster Flash describes the psychological stress of “broken glass,” “smell,” and “noise” of the housing projects as pushing him “to the edge.” “It’s like a jungle sometimes that makes me wonder how I keep from going under,” he closes his thought.11 If the built environment so powerfully effects philosophical, political, and cultural discourse, designers of the built environment have the grounds to directly engage and drive these conversations.

The built environment is the stage for our individual goods and desires to play out in the context of public policy, common goods, and shared beliefs. As designers of the built environment have a role in shaping these ethical subjects, they also have a responsibility to engage in ethical conversations regarding these subjects. Engaging in, and shaping ethical discourse is the consumption of design as ethical inquiry, as it forms a comprehensive critique of hypotheses about the built environment; it could be considered and end or a beginning point of a cycle of conceptualization, creation, and critique.


“... engaging in and shaping ethical conversations is the consummation of design as ethical inquiry, as it forms the final critique of hypotheses about the built environment...”
Because building has large and long-lasting impacts on us and our environment, and at its core is a process engaging ethics, building designers ought to proactively engage ethical conversations through the design process. The foundational step in doing this is discovering a framework for approaching building design in terms of ethical inquiry, so that our design process becomes our way of discovering, creating, and testing what is good.

Proactively engaging in ethical conversations through the design process is of utmost importance for building professionals, as I’ve made the case for throughout this book. Narrowing this down to specific application, however, is a task in itself. Ethics, philosophy of building, and design process are admittedly abstract topics. Many of the issues noted in this book are too large and comprehensive for any one designer to tackle. Some of the examples given, as pertinent as they are to their given context, may not find direct applications in your particular practice. So, as a final note, here are some suggestions to get you thinking about how you as an individual can have an impact.

First, I’d encourage you to think about how your specific profession, area of expertise, or role impacts the world around you and the people in it. Ethics have broad implications, and shaping our environment is a vast endeavor, but focusing on your specific abilities and the kind of impact you have in your profession will help illuminate contributions you can make toward a better world. I would also consider what you’re passionate about; passion gives you energy to do the hard work needed to make an impact. Your passion could likely be something outside of your profession per se, and that’s okay: The built environment touches almost everything we do. Next, make yourself aware of current issues, both in local and global contexts, which involve the built environment. Again, most everything we do as humans in some way relates to our built environment, so any newsworthy event or collective discussion can be considered in terms of design. At the intersection of these three things, your abilities, your passions, and available opportunities, are a multitude of ways to take action. Finally, it’s good to stay sharp. I invite you to continually challenge your beliefs about the built environment, the impact building can have, and the ethical imperatives for designers. Investigating further into the work and writings of the many of individuals and organizations mentioned in this book is a good way to start.

2. Denise, White and Peterfreund, Great Traditions in Ethics, 8-90 (section on Classical and virtue ethics)

3. Denise, White and Peterfreund, Great Traditions in Ethics, 8-36, 62-90 (chapters on Plato, Aristotle, St. Augustine, St. Thomas Aquinas)

4. Denise, White and Peterfreund, Great Traditions in Ethics, 356-373 (chapter on Bernard Williams)


6. MacIntyre resists the notion that he is a virtue ethicist strictly speaking, but his work has both advocated for philosophical positions and practices aligned with traditional virtue ethics, and been critical of contemporary approaches to modern moral philosophy. (From John Dewey’s The Quest for Certainty, 1929)

7. Denise, White and Peterfreund, Great Traditions in Ethics, 145-158 (Chapter on Immanuel Kant)

8. Denise, White and Peterfreund, Great Traditions in Ethics, 299-368 (chapter on K.D. Ross)

9. Denise, White and Peterfreund, Great Traditions in Ethics

10. Denise, White and Peterfreund, Great Traditions in Ethics

11. Denise, White and Peterfreund, Great Traditions in Ethics, 190

12. Denise, White and Peterfreund, Great Traditions in Ethics, 159-172 (Chapter on John Stuart Mill)

Beverly Kracher, PhD, was especially helpful in my research into the fields of ethics and philosophy through several conversations and a phone conversation on 05/11/2017 and email conversations 05/22/2017 and 07/07/2017. Kracher is a Professor at Creighton University’s Heider College of Business, Executive Director, of the Business Ethics Alliance, and Robert B. Daugherty Endowed Chair in the Business Ethics and Society.

1.2 ETHICS AS PROCESS

1. Denise, White and Peterfreund, Great Traditions in Ethics, 249

"This, then, is our first question: What is good? And what is bad? And to the discussion of this question (or these questions) I give the name of Ethics, since that science must, at all events, include it.

From Princpa Ethica, G.E. Moore, 1940)
1.6 DESIGN AS ETHICAL INQUIRY

1. Dense, White and Peterfried, Great Traditions in Ethics, 241.


2.0 DUTY, ABILITY, + NEED


4. I’ve seen this figure or similar estimations in several books and presentations including Thomas Fisher’s introduction Expanding Architecture: Design as Activism (Bell, Bryan, and Wakeford, Kate. Metropolis Books / Bellorophon Press. Texas, 2008). Depending on the definition of “direct” service, and the scope of architecture as a profession, this figure might fluctuate. The point remains that architecture, engineering, and other design services are needed by the majority of the world’s population, but currently only benefit a minority.


9. Flusser, The Shape of Things, 66, from his essay The Ethics of Industrial Design

10. Flusser, The Shape of Things, 66-69, from his essay The Ethics of Industrial Design

2.1 NECESSITY


2. United Nations, World Urbanization Prospects: The 2014 Revision, Highlights Page 1


2.2 IMPACT

1. 5,000 SF of new space per year is based off an average addition of 1.5 Billion SF of new commercial building space per year, and an estimate of ~300,000 building design professionals.


4. “A typical passenger vehicle emits about 4.7 metric tons of carbon dioxide per year.”


2.3 DEGREES OF PARTICIPATION

1. LEED is a green building rating system created by the U.S. Green Building Council. https://new.usgbc.org/leed

2. WELL is a building rating system focusing on health and well-being. https://www.wellcertified.com/

2.4 DIRECTIONS OF INNOVATION

1. https://massdesigngroup.org/design


3.0 WHAT IS BUILDING?


3.1 BUILDING AS A TOOL


3. Wilson, The Domestication of the Human Species: 1988, 68

3.4 BUILDING AS AN ACTOR

1. Flusser, The Shape of Things. 59, from his essay: Design: Obstacle for/to the Removal of Obstacles

3.4 BUILDING AS AN ACTOR

1. Flusser, The Shape of Things. 59, from his essay: Design: Obstacle for/to the Removal of Obstacles

4.1 EMPATHY


5. Beyond Shelter: Architecture and Human Dignity. 43-52 Beyond Shelter in the Solomon Islands, Andrea Nield


7. https://www.lakeflato.com/


4.2 IMAGINATION

1. Flusser, The Shape of Things. 39, from his essay: The Designer’s Way of Seeing

2. www.ucal.ca/charlett/architecture/

3. www.gsd.harvard.edu/

4. www.soarc.edu/

5. www.arch.columbia.edu/


9. Flusser. The Shape of Things. 59, from his essay: Design: Obstacle for/to the Removal of Obstacles


4.3 NEGOTIATION

1. Dense, White and Peterfreund, Great Traditions in Ethics, 319-330

2. On Thomas Hobbes, a 17th century British philosopher who was one of the first to express the idea of the social-contract. “Hobbes believes that reason points to voluntary collective organization as the most effective way for individuals to utilize their powers...Each individual asserts in effect, “I authorize, and give up my right of governing myself, to this man or to this assembly of men, on this condition that thou give up thy right and authorize all his actions in a like manner.” It is through a “social contract” that the state of nature is transformed into a civil society.” Dense, White and Peterfreund, Great Traditions in Ethics, 93


4. Dense, White and Peterfreund, Great Traditions in Ethics, 327-329


9. Flusser. The Shape of Things. 59, from his essay: Design: Obstacle for/to the Removal of Obstacles


4.3 NEGOTIATION

1. Dense, White and Peterfreund, Great Traditions in Ethics, 319-330

2. On Thomas Hobbes, a 17th century British philosopher who was one of the first to express the idea of the social-contract. “Hobbes believes that reason points to voluntary collective organization as the most effective way for individuals to utilize their powers...Each individual asserts in effect, “I authorize, and give up my right of governing myself, to this man or to this assembly of men, on this condition that thou give up thy right and authorize all his actions in a like manner.” It is through a “social contract” that the state of nature is transformed into a civil society.” Dense, White and Peterfreund, Great Traditions in Ethics, 93


4. Dense, White and Peterfreund, Great Traditions in Ethics, 327-329


4.4 PARTICIPATION


4.5 EVALUATION


3. Denise, White and Peterfreund, Great Traditions in Ethics, 249

4. LEED is a green building rating system created by the U.S. Green Building Council. https://www.usgbc.org/leed


