Horst W. J. Rittel's Writings on Design: Select Annotations
Chanpory Rith and Hugh Dubberly

Rittel's bibliography contains over one-hundred unique entries on many subjects. The following annotations are for works which we feel are most relevant to designers. This is a very subjective and arbitrary list. In choosing works to annotate, we considered how often a work was cited, its date of publication, and its uniqueness in relation to other works. These works are presented in chronological order.

The Universe of Design: Faculty Seminar, College of Environmental Design, Spring 1964.
Berkeley: Institute of Urban and Regional Development, University of California, 1964.

The Universe of Design: Faculty Seminar, College of Environmental Design, **Spring 1964.**
Surveys existing methodologies for creating "innovation" and related notions such as "image," "model," and "problem/solution" in relationship to institutionalized science. Finds these methodologies—and the nineteenth century view of science in which they are rooted—insufficient for innovation and design which are inherently political and subjective, rather than neutral and objective. Rather than a single definition, proposes some properties of design. Concludes that "any theory of innovation including a theory of design must be based on a theory of action, not a theory of knowledge (epistemology) alone." Lays the ground for later concepts such as "wicked problems," "design rationale," and "instrumental knowledge."

"Instrumentelles Wissen in der Politik."
Beiträge zum Verhältnis von Wissenschaften und Politk. Helmut Krauch, ed. Heidelberg: Studiengruppe Für Systemforschung, 1966. 183–209.

"Instrumental Knowledge in Politics."
Presents the ineffectiveness of political decision-making systems as a symptom of a limited model of knowledge. Suggests that improving these systems requires an expanded model which, in addition to factual knowledge, includes "instrumental knowledge" or knowledge about actions that meet goals. Also emphasizes that improvements entail political involvement in contrast to the cherished neutrality of traditional science. Thus, implies a new type of science which is rigorous but sheds objectivity in its goal to generate useful instrumental knowledge. Concludes by countering attitudes of defeatism to this idea, advocating a search for better political decision systems despite formidable obstacles, seeming futility, and potential abuse.

"Some Principles for the Design of an Educational System for Design."
Education for Architectural Technology. J. Passonneau, ed. St. Louis: Washington University and the AIA Educational Research Projects, 1966. 103–151.

"Some Principles for the Design of an Educational System for Design."

Criticizes existing design curricula as poor preparation for tackling planning problems and proposes a goal-oriented approach to design education that focuses on the difficulties of designing. Also argues that the master-apprentice tradition is inflexible and that the common debate of "breadth" versus "depth" is simplistic. Advocates teaching general theoretical principles to reduce, but not eliminate, the reliance on more specific, shorter-lasting "rules of thumb." Also urges designers to be aware that design is political and to continue learning how to design better despite "difficulties, paradoxes, and dilemmas."

"Dilemmas in a General Theory of Planning."
Panel on Policy Sciences, American Association for the Advancement of Science. 4 (1969): 155–169.

"Dilemmas in a General Theory of Planning."

Introduces the notion of "wicked problems," emphasizing its social and political context. In addition, criticizes the inadequacy of existing Newtonian-based scientific and professional processes, because wicked problems cannot be solved by traditional and formulaic processes. Suggests that the ideal planning model is a cybernetic—goal-oriented and involving feedback—process.

Issues as Elements of Information Systems.
Working Paper No. 131. Berkeley: Institute of Urban and Regional Development, University of California, 1970.

Issues as Elements of Information Systems.

Outlines Issue-Based Information Systems (IBIS), providing an early model of design rationale systems that aim to explicitly capture, structure, and represent the deliberations and reasonings that occur during planning processes. Specifies that these systems center around issues, questions of fact, positions, arguments, and model problems. Considers these systems beneficial because they make the design process transparent, provide a history of previous and existing states of discourse, and are adaptable to rapidly changing language.

"Information Science: On the Structure of its Problems."
Information Storage and Retrieval. 8.2 (1972): 95–98.

"Information Science: On the Structure of its Problems."

Compares first and second generation design methods in relation to the evolving discipline of information science. Specifically finds the discipline's heritage in traditional science and factual knowledge as an obstacle for growth. Identifies organizing the discourse during the planning process as its central issue.

"On the Planning Crisis: Systems Analysis of the 'First and Second Generations.'"
Bedrifts Økonomen. 8 (1972): 390–396.

"On the Planning Crisis: Systems Analysis of the 'First and Second Generations.'"

Summarizes characteristics of the first and second generation of system approaches to design, underscoring the limits of a sequential, scientific, and rational approach (first generation) to tackling "wicked" problems. Notes the "symmetry of ignorance" in defining wicked problems. Posits expertise and ignorance as "distributed over all participants." And thus presents the second generation approach as an argumentative process that is inherently collaborative and political.

"Son of Rittelthink: The State of the Art in Design Methods."
The DMG 5th Anniversary Report. DMG Occasional Paper No. 1. 7.2 (1972): 143–147.

"Son of Rittelthink: The State of the Art in Design Methods."

In interview form, summarizes the origins of first generation design methods and presents second generation methods as better suited for addressing the shortcomings of the first generation. Identifies the theoretical and practical applications of the argumentative model of the design process as areas for further development.

"How to Know What is Known: Designing Crutches for Communication."
Representation and exchange of knowledge as a basis of information processes. Proceedings of the Fifth International Research Forum in Information Science (IRFIPS), Heidelberg Sept. 1983. Ed. Dietschmann, Hans J. Amsterdam: Elsevier Science Publishers B.V. (North-Holland), 1984.

"How to Know What is Known: Designing Crutches for Communication."

Presents a theory of information science that views information as a knowledge changing event rather than as stored data. Criticizes attempts by artificial intelligence researchers to mimic the brain, and instead proposes research to find tools or "mental crutches" that enhance "natural intelligence." Finds, however, that most existing tools and information systems are limited because they merely confirm knowledge. Provides guidelines for more "natural intelligence-reinforcement" systems that cast doubt, point out ignorance, and thus are more useful because they open up new possibilities.

The Reasoning of Designers.
Arbeitspapier A-88-4. Stuttgart: Institut für Grundlagen der Planung, Universität Stuttgart, 1988.

The Reasoning of Designers.

Encapsulates Rittel's own design philosophy. Argues that design is a planning activity that involves models, that the reasoning of designers is a process of argumentation unlike problem solving, and that design is political and associated with power. Also asserts that design is subjective and that designers are responsible for their judgments. Maintains that advancement of the design field requires a new science of design, and proposes three tasks: to develop "theories of design," to inquire empirically into "how plans come about," and to look for "tools to support designers."