

[2] Exercise 3: Design Methods Fundamentals

Issued: Monday 11 September
Pin-ups: Mon. 2/11/16 October & Wed. 4/11/23 October
Review: Wed. 18 & Wed. 25 October
Upload: Wed. 1 November

Modality: Teamwork (groups of 2 students)

Grading: 40% of course grade

“Design methods generally help to formalize and systematize activities within the design process and externalize design thinking, that is, they try to get the designer’s thoughts and thinking processes out of the head ... Design methods were also considered to exhibit certain characteristics in terms of their usage, such as the goals the methods serve, their general applicability, conditions under which they can be used, whether the methods are intended for single designers or for design teams, their origins, how they function (modus operandi) and the time demanded by the methods.”

NFO Evbuomwan, S Sivaloganathan, A Jebb (A Survey of Design Philosophies, Models, Methods and Systems, *Proc Instn Mech Engrs* Vol 210, 1991, p 315)

Challenge

The overall premise of this course is that every design process occurs within a general methodology that (pre)determines its ideology, universe, and mode of inquiry (i.e., questions, strategies, and tactics), knowledge base, representation techniques, goals, and expectations. In this assignment, you will investigate 3 design methods using an analysis of specific architects and architectural projects to enable you to make insightful comparisons. The challenge is to distill the strengths, weaknesses, ideology, and attitudes intrinsic to each method.

PART A: Comparative Study

A comparative investigation of 3 methods using 6 projects (teams of 2 students). Each team will study 3 methods to be assigned by lottery. See attached.

1. Discovery (projects selection for 2 Methods due 22 September)

For each of the 3 methods assigned, you are to select 2 projects to investigate – ideally, these 2 projects should be from the same architect (but we’d consider 2 projects by 2 different architects). See suggestions on the attached sheet; other architects may be allowed with approval by the instructors. During the project selection, it will be critical for you to choose ones with ample published information to allow you insight into the

architects' process, ideology, and mode of inquiry. It ultimately will enable you to draw comparisons between each methodology.

During the discovery phase, you are to collect information about each project that allows you insight into the evolution of the work and the specific method utilized for the design. This will include typical orthographic drawings and photographs, but more importantly must consist of images from the design process (sketches, models, diagrams, material investigations, studio photos, etc.), writings about the work, and lectures or interviews given by the architects about the projects (The AA's lecture archive is a good resource for lectures given by contemporary architects:

<http://www.aaschool.ac.uk/PUBLIC/AUDIOVISUAL/videoarchive.php>

2. Analysis

Proceed to organize the information visually in ways for you to graphically demonstrate how the methodology influences the design process. Specifically, seek images that illustrate the project's or architect's response to: 1) the white canvas problem, 2) program/function, 3) memory (history and/or knowledge base), 4) context, 5) form, 6) experience (i.e., building reception), 7) materiality/tectonics, 8) representation/communication technique-media, 9) goals and expectations, and 10) ideology. Alternatively, you may decide to add (or exchange) other variables such as "budget," "user's response," etc. (as long as you consider them across the board). Image selection will be critical to clearly communicating the methodology's embodiment within the project. Note that each methodology may not respond to all of the above criteria; it is essential to identify a lack/weakness of response.

3. Synthesis (*the study of 2 methods should have been completed by 4/6 October*)

Utilizing the matrix provided, compose and format the graphic analyses of each project. Make sure to diagram the design process phases, which, in general, may be defined as a) inquiry/research/analysis, b) idea generation/exploration, c) schematic design/synthesis, d) evaluation, and e) final. Then take a step back and consider each methodology's influence on the design process by using both projects. Add notes, diagrams, or additional illustrations to the matrix.

4. Reflection/Red-Lining (*18/20 October*)

Having completed the synthesis, work comparatively to identify each methodology's strengths, weaknesses, ideology, and attitudes, again add notes, diagrams, or additional illustrations to the matrix. Consider what/why/when/how to use a particular approach, method, and process. Expressly reflect upon the following: What ideology is central to the method? What sorts of design problems does the method allow the architect to answer? What are the goals the method serves? What are the expectations for the method? Under what conditions can the method be utilized? What is the time demanded by the method? Be prepared to present and discuss your conclusions. Make sure to consider the 'ends' of the matrix as the places where such insights are recorded.

PART B: COMMUNICATION (Presentation Media and Format)

- 1.** *Graphic media format should follow the matrix provided. The choice of a vertical or horizontal format is up to the students. Recommended size: 4' (48") x 6' (72")*
- 2.** *Written summary of your inquiry – in addition to what you include in your boards (500 words max).*

3. *Oral presentation.* You'll have 10 minutes to present what you learn from this comparative analysis. Please, do not discuss what is already on the boards but focus on the relative differences and/or specific characteristics that make each methodology/ideology unique.
4. *Document your work* (JPG or PDF at 150dpi) and upload the files to the class GOOGLE DRIVE site using a coherent labeling system (e.g., lastname1-lastname2_project3.pdf). Upload Deadline: Nov 3.

BIBLIOGRAPHY

Antoniades, Anthony. *Poetics of Architecture: Theory of Design*. New York: Van Nostrand Reinhold, 1992

Ching, Francis. *Architecture: Form, Space, and Order*. New York: J.Wiley, 2007

Clark, Roger and Pause, Michael. *Precedents in Architecture: Analytic Diagrams, Formative Ideas, and Partis*. New York: J.Wiley, 2012

Unwin, Simon. *Analysing Architecture*. New York: Routledge, 1997

Books/articles/web resources, etc., based on your research/studies.

TEAM ASSIGNMENTS

| team 1 | team 2 | team 3 | team 4 | team 5 | team 6 | team 7 |
|--------|--------|--------|--------|--------|--------|--------|
| 1 | 2a | 3a | 3b | 3d | 4 | 1 |
| 2b | 2c | 3c | 5 | 10 | 6 | 11 |
| 9 | 6 | 7 | 8 | 13 | 9 | 12 |

| team 8 | team 9 | team 10 | team 11 | team 12 | team 13 | team 14 |
|--------|--------|---------|---------|---------|---------|---------|
| 3a | 3c | 2a | 2b | 2c | 2a | 8 |
| 5 | 10 | 7 | 12 | 3d | 3d | 10 |
| 9 | 11 | 8 | 13 | 6 | 5 | 11 |

| team 15 | team 16 | team 17 | team 18 | team 19 | | |
|---------|---------|---------|---------|---------|--|--|
| 1 | 5 | 4 | 3d | 3c | | |
| 2c | 6 | 7 | 9 | 8 | | |
| 4 | 10 | 13 | 12 | 11 | | |

| Design Method | Short Explanation/Definition | Focus* | most related to methods | architects and projects |
|-----------------------------|--|----------------|---|--|
| 1. archetypal | fundamentals, elements, myths, place making, ritual | 4 | 2a, 5, 6, <u>7</u> , 9, 10 | not based on architect but ancient architecture (e.g., Greek vs Roman Place making --agora v forum), Louis Kahn, Claude-Nicolas Ledoux |
| 2. typological | 2a. form | 3 | 1,2b, <u>3d</u> , 5, <u>6</u> , <u>10</u> | not based on architect (e.g., Hagia Sophia, Church of the St. Peter Basilica, Taj Mahal) but Mario Botta, John Hejduk, Aldo Rossi, Andrea Palladio, Bramante & Michelangelo |
| | 2b. building | 3 | 2a, 2c, 5, <u>12</u> | not based on architect but ... Victor Gruen, UN Studio (towers), traditional and vernacular architecture , also: New Town Sector of Edinburgh, Royal Crescent, Bath; Florence Bell Tower - Giotto , Stockholm City Hall, 20th C Skyscrapers |
| | 2c. function | 3 | 2a, 4, <u>9</u> , <u>10</u> | not based on architect but ... Alvar Aalto (libraries), Moshe Safdie (libraries), Rudolf Schwarz (churches), St Gall Monastery plan (prototype); St Marie de la Tourette; St Peter Seminary - Cardross Scitland; Raddiffe Library - Oxford; Library - University of Virginia; Anna Amalia Library; University Club Library - NYC; Ashmolean Museum; National Gallery of Art - DC; Bibliothec St Genevieve - Paris |
| 3. canonic | 3a. exemplar-based | 3 | 2a, 2b, 2c | Frank Lloyd Wright (prairie houses), Le Corbusier (villas), Palladio (villas), English Palladians |
| | 3b. style-based | 3 | 3d, 9, 10 | Richard Meier, Philip Johnson, Duncan Stroik, David Schwarz |
| | 3c. rule-based | 3 | 2a, 5, 8 | Le Corbusier's 5 ppls, Peter Eisenman (House series), any Classical-Orders-based architect that starts with and sticks to the orders - Stroik; Early English Palladians; |
| | 3d. historicist | 3 | 3b, 9, 10 | Allan Greenberg, Michael Graves, Robert Stern, Richard Meier, Philip Johnson, David Schwarz, most of Sir Christopher Wren's works |
| 4. Functional/Ethics | respond to needs, program | 2 | 2c, 6, <u>12</u> | Cesar Pelli, Alvar Aalto, E. Fay Jones, Architecture Research Office, Lewis Tsurumaki Lewis, Toyo Ito, Alejandro Aravena, Shigeru Ban. Studio Gang Architects, Santa Barbara CA City Hall Complex; The early Christian Basilica |
| 5. Formal/Aesthetic | order, geometric, space, experimental (e.g., expressive, improvisational) | 3 (1) | 1, 2a, 2b, 3c, <u>6</u> , 10, <u>11</u> | Alberto Campo Baeza, Luis Barragan, John Pawson, Antoine Predock, Frank Gehry, Daniel Libeskind, SANAA, Yoshio Taniguchi, Mecanoo, Alvaro Siza, Christian de Portzamparc, Rafael Viñoly, Michelangelo, John Sympton, Edwin Lutyens, John Russell Pope |
| 6. Phenomenological | experience, feeling, psychology, embodiment, immer | 1 | 1, 2a, 5, <u>7</u> , 10 | Tadao Ando, James Turrell, Peter Zumthor, Steven Holl, Bormida & Yanzon, Rick Joy, Sainte Chapelle - Paris; Some cistercian Abbeys interiors - say Alcobaca |
| 7. Tectonic | materiality, light, technology, structure, fabrication | 3 | <u>1</u> , <u>5</u> , <u>6</u> , <u>12</u> | Santiago Calatrava, Herzog-de Meuron, Renzo Piano, Norman Foster, NADAAA, SHoP, Snøhetta, Shigeru Ban, Carlo Scarpa, Ben van Berkel, McKim Meade and White (Penn Station), Thomas F Pritchard (Iron Bridge, Coalbrookdale); Paxton (Crystal Palace), Roebling (Brooklyn Bridge) |
| 8. Theoretical | philosophical, ideological, or theoretical inquiry followed thru architecture (e.g., deconstructivism, VAS) | depends | depends | Le Corbusier, Peter Eisenman, Mies van der Rohe, John Pawson, Morphosis/Thom Mayne, Zaha Hadid, Rem Koolhaas, Bernini (Piazza San Pietro and Sant' Andrea al Quirinale), Borromini (St Ivo alla Sapienza) and Guarino Guarini (Domes) |
| 9. Contextual | socio-cultural issues, environmental factors-sensitivity, vernacular, site, sustainability, nature | 2 and 3 | 1, 2b, 3d, 10, 12 | Hassan Fathy, Venturi & Scott Brown, Glenn Murcutt, Charles Correa, Luis Barragan, Wang Shu, Kengo Kuma. Bernini (Piazza San Pietro), Michelangelo (Campidoglio) |
| 10. Symbolic | meaning, semiotic, experience (the semantic, syntax and pragmatics of bldgs) | 2 (1) | 1, <u>2a</u> , <u>2b</u> , <u>3b</u> , <u>3d</u> , 5, 6 | Antonio Gaudi, Maya Lin, Oscar Niemeyer, the Theology of the Eastern Catholic Church Building; Abbot Suger (Gothic Cathedral) |
| 11. Conceptual | idea or concept driven process coming from within (e.g., 'machine in the garden') or without (literature, science, art, etc.) discipline | depends | depends | John Hejduk, Emilio Ambasz, Diller Scofidio+Renfro, FOA, Rem Koolhaas, Bernard Tschumi, REX |
| 12. Collaborative | social, participatory, market-driven, hands-on, design-build | 2 | <u>4</u> , <u>7</u> , <u>9</u> | Lucien Kroll, Onion Flats (Tim McDonald), SHoP, GA Collaborative, Public Architecture, the English Medieval - through current day "High Street", New Urbansim; |
| 13. Other | representation-media, production-market (e.g., blob architecture), evidence-based design (i.e., research-based) | depends | depends | Bjarke Ingels, Daniel Libeskind (early), Greg Lynn, Kieran-Timberlake, Jorn Utzon, Eero Saarinen, Marshall Brown |

Notes

* 1st Person (I): subject, me, self. 2nd Person (WE/YOU): other, social, intersubjective. 3rd Person (IT): object, building. 4th Person: all 3 considered.

** an underlined number suggest a natural stronger connection to this method (but may-may not be there depending on how one approaches it)

*** in red: architects and methods strongly related to classical and traditional perspectives

| | | White Canvas Problem | Program / Function | Memory (History and/or Knowledge-base) | Context | Form | Experience | Materiality / Tectonics | Representation | Ideology / Goals & Expectations | Design Process Phases Diagram | Comparative Analysis (Strengths & Weaknesses) |
|--------------------|-----------------------------|----------------------|--------------------|--|---------|------|------------|-------------------------|----------------|---------------------------------|-------------------------------|---|
| method 1 | Project 1 | | | | | | | | | | | |
| | Project 2 | | | | | | | | | | | |
| method 2 | Project 1 | | | | | | | | | | | |
| | Project 2 | | | | | | | | | | | |
| method 3 | Project 1 | | | | | | | | | | | |
| | Project 2 | | | | | | | | | | | |
| 3 methods | <i>Comparative Analysis</i> | | | | | | | | | | | |
| conclusions | | | | | | | | | | | | |

| | Method 1 | | Method 2 | | Method 3 | | 3 Methods |
|--|--------------------|-----------|-----------|-----------|-----------|-----------|----------------------|
| | Project 1 | Project 2 | Project 1 | Project 2 | Project 1 | Project 2 | Comparative Analysis |
| White Canvas Problem | | | | | | | |
| Program / Function | | | | | | | |
| Memory (History and/or Knowledge-base) | | | | | | | |
| Context | | | | | | | |
| Form | | | | | | | |
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| Design Process Phases Diagram | | | | | | | |
| Comparative Analysis (Strengths & Weaknesses) | | | | | | | |
| | conclusions | | | | | | |