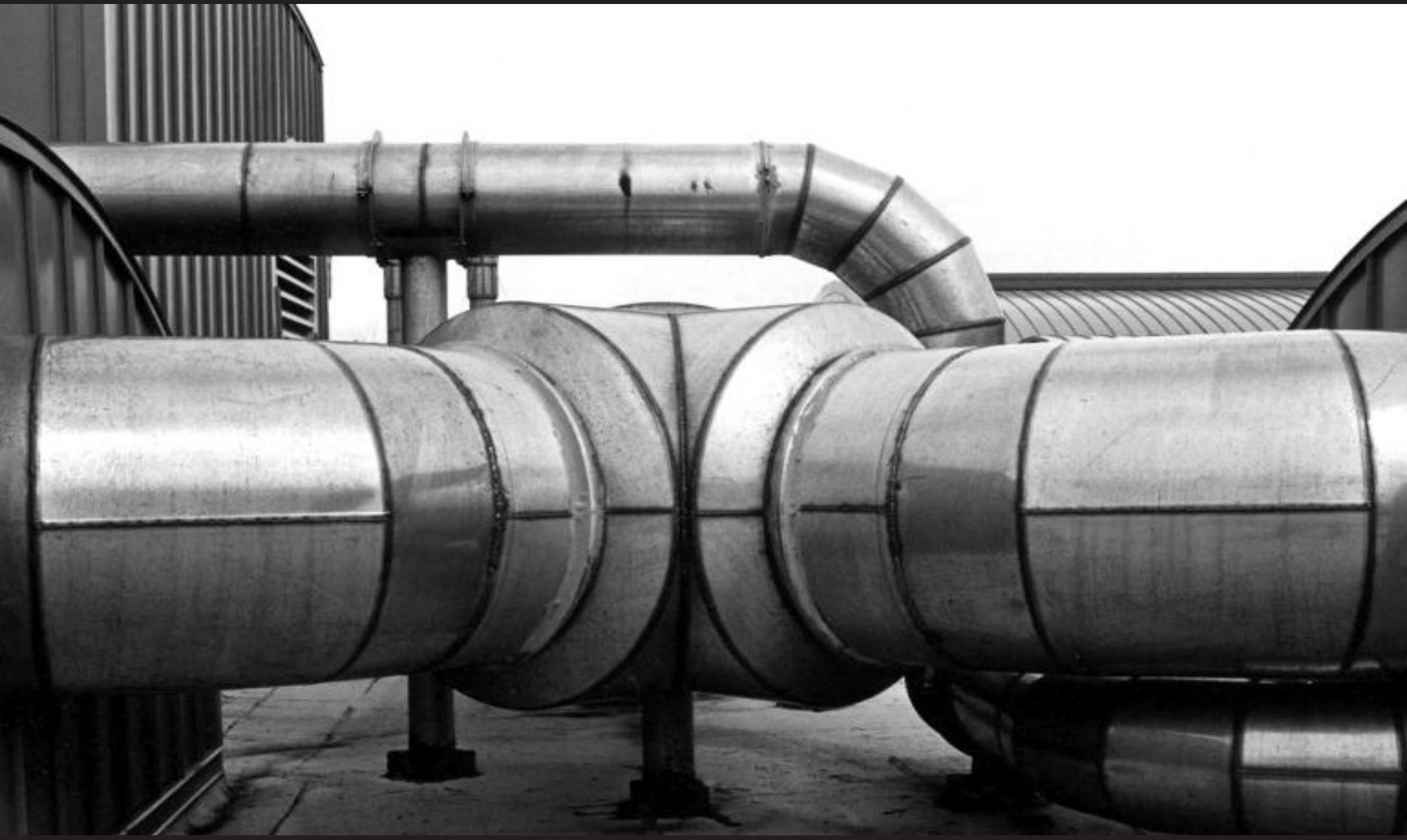
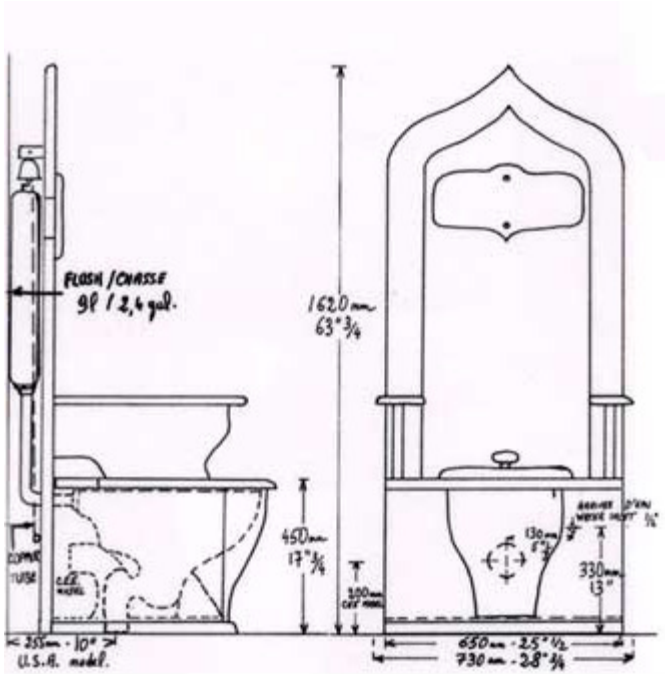
Architectural Technology III



ARCH 523 | Environmental Controls

Architectural Technology III



Jeremy Kargon, Registered Architect

Born: Champagne-Urbana, Illinois
Raised: Baltimore, Maryland

Masters of Architecture	1988
Licensed Architect	1991
Lecturer, Morgan State	2007

Research Topics:
The "Language" of Architecture, Visual Culture, and the Visual Expression of Technology; Architectural Video; Graphic Design

Architectural Technology III

What makes us human?

Physiology

Behavior

Architectural Technology III

Gustav Moreau,
Prometheus

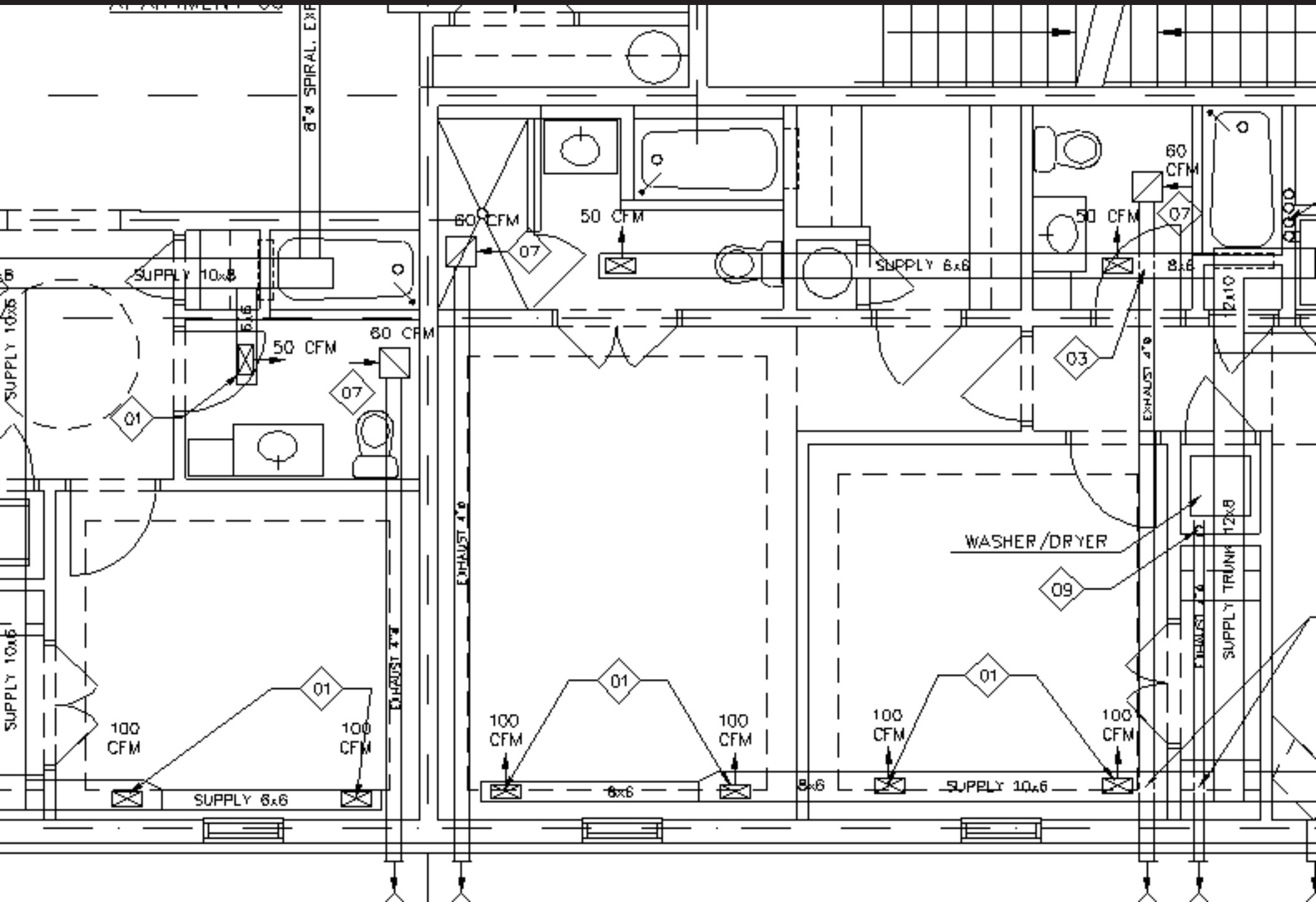
Prometheus and Atlas,
Punished by Zeus

Rene Magritte, *The Discovery of Fire.*

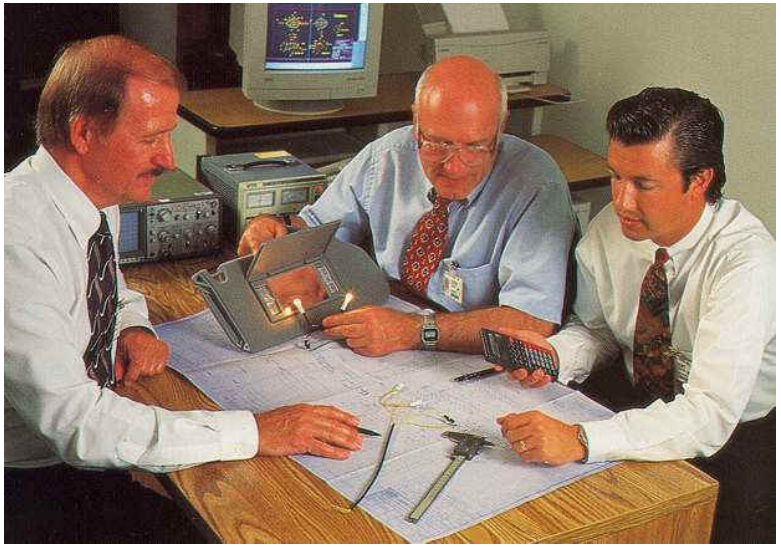
Architectural Technology III

*This course, **Environmental Systems**, is essentially about the way in which our designs embody our* **human** *nature.*

Architectural Technology III



Architectural Technology III



Architectural Technology III

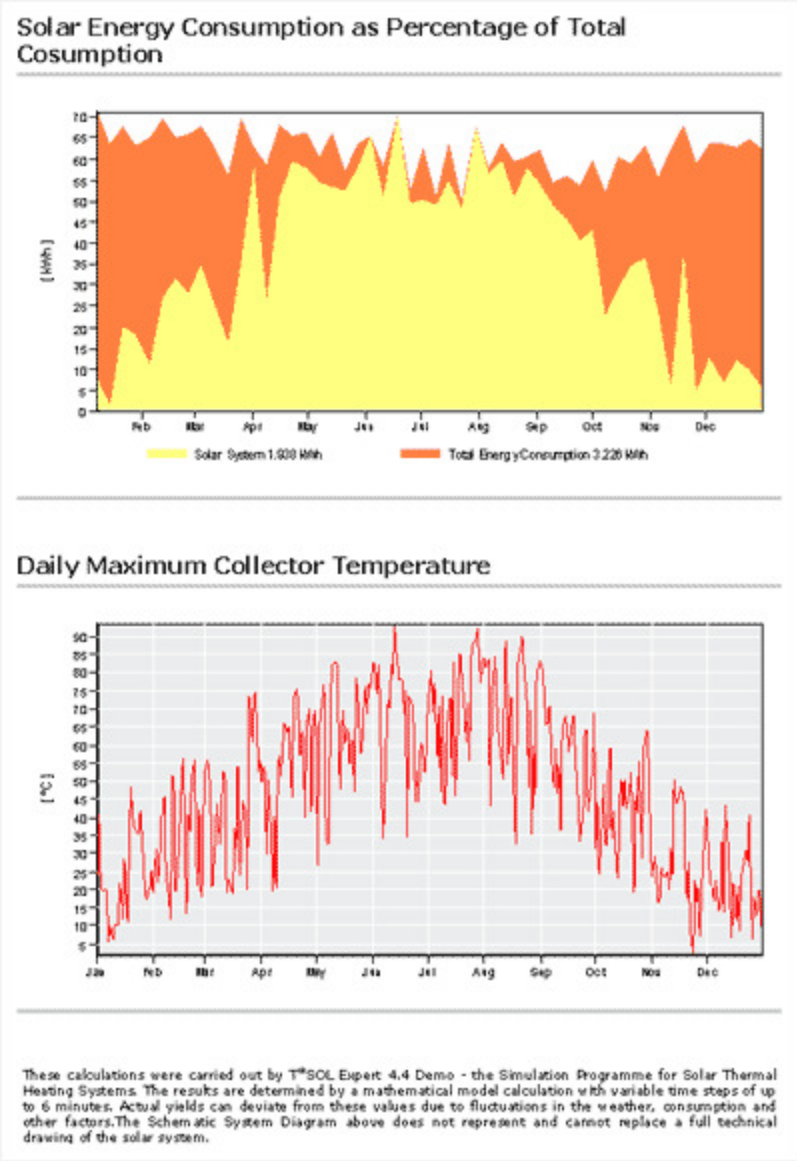
Norman Foster

William McDonogh

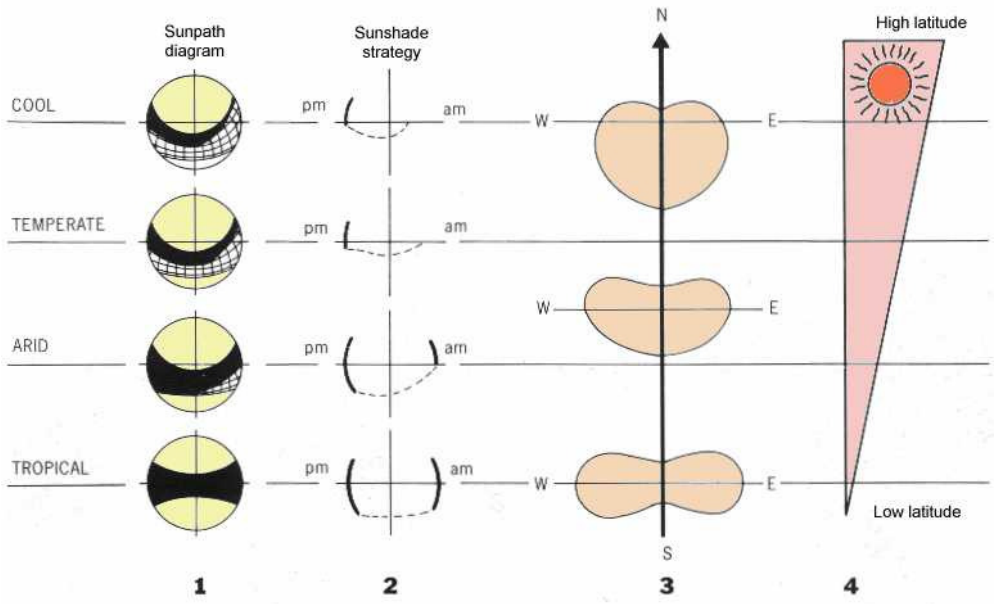
Majora Carter

Stephan Behnisch

Solar Fraction Analysis



Sunshade Analysis



Sunshade Mechanisms

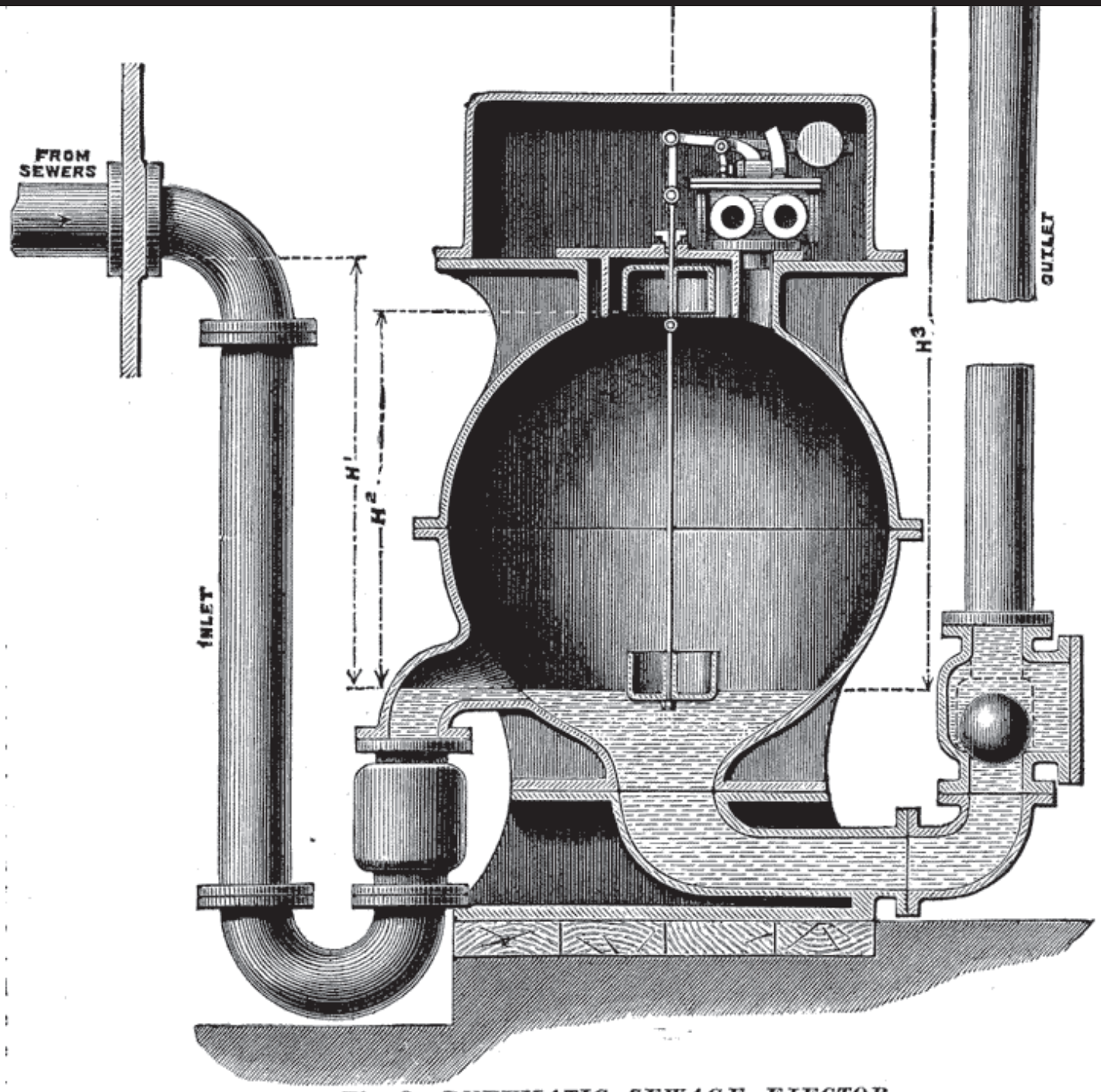
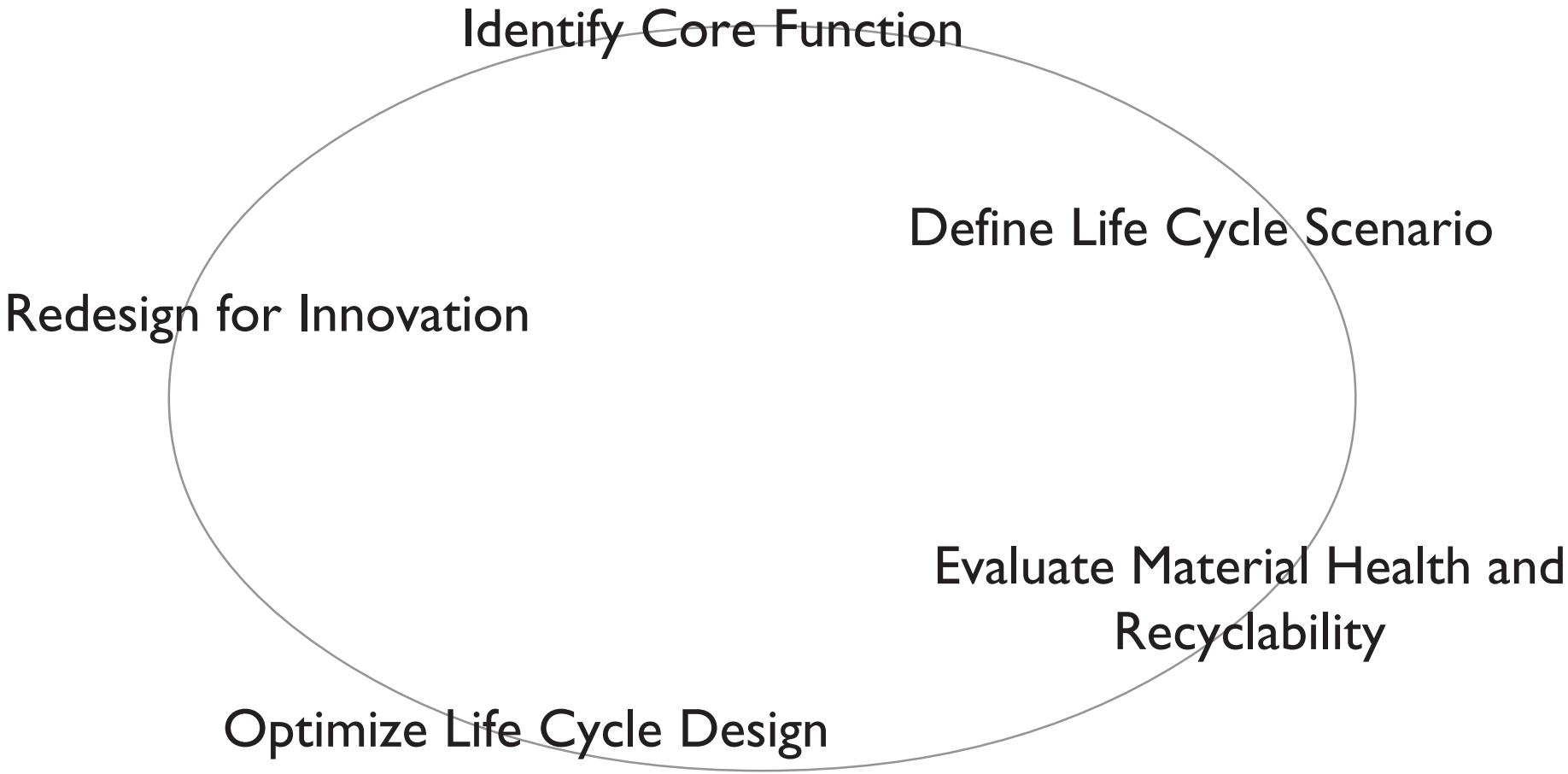


Fig. 2.—PNEUMATIC SEWAGE EJECTOR.

Example: "Cradle to Cradle" Methodology



Look Around You!

Course Introduction

This course presents an overview of the design of lighting and climate control systems that facilitate the comfort of building occupants.

Emphasis is placed on the importance of functional, energy-efficient and sustainable strategies employed during the earliest stages of design investigations.

The first portion of the semester is focused on the analysis of building heating/cooling requirements, and the last portion focuses on lighting systems.

Course Goals:

Upon completion of this course, the student should show clear evidence of:

1 A social and historical awareness of the role environmental systems have played and will continue to play in the shaping of our built and natural environments.

2 A basic understanding of the nature and characteristics of the most commonly employed environmental control systems.

3 A basic understanding of how the responsible design of building envelope systems contribute to the energy performance of buildings.

4 A nascent ability to make environmentally responsible design decisions that adequately address issues of suitability, economy, operating efficiency, durability, safety and aesthetics.

Objectives:

1 An analysis of overall rate of heat loss.

2 An analysis of approximate Solar Savings Fraction (SSF).

3 An analysis of approximate heat gain.

4 A Daylight analysis using the Daylight Factor Method for Side lighting.

5 Daylight level calculations.

6 A narrative on the potential impact of energy and lighting analyses on building design.

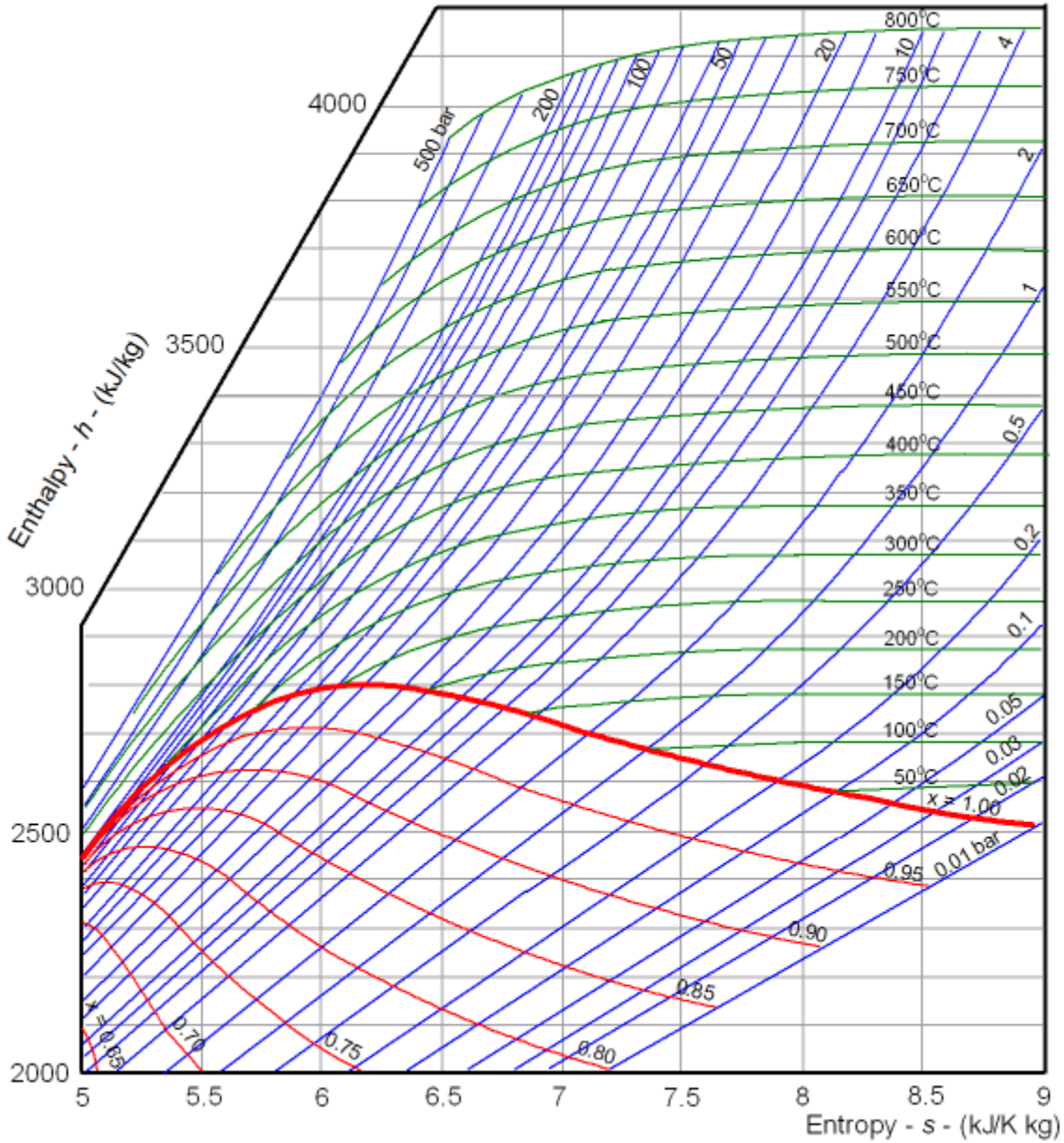
Course Text Books

Mechanical & Electrical Equipment for Buildings

Sun Wind & Light: Architectural Design Strategies

Cradle to Cradle

Grading



Mollier Diagram -- Entropy/Enthalpy

Send me Your E-mail: jk@jkargon-architect.com

Visit the Course Web Site (under Construction):

http://www.jkargon-architect.com/94_HOME-Environmental-Systems.html

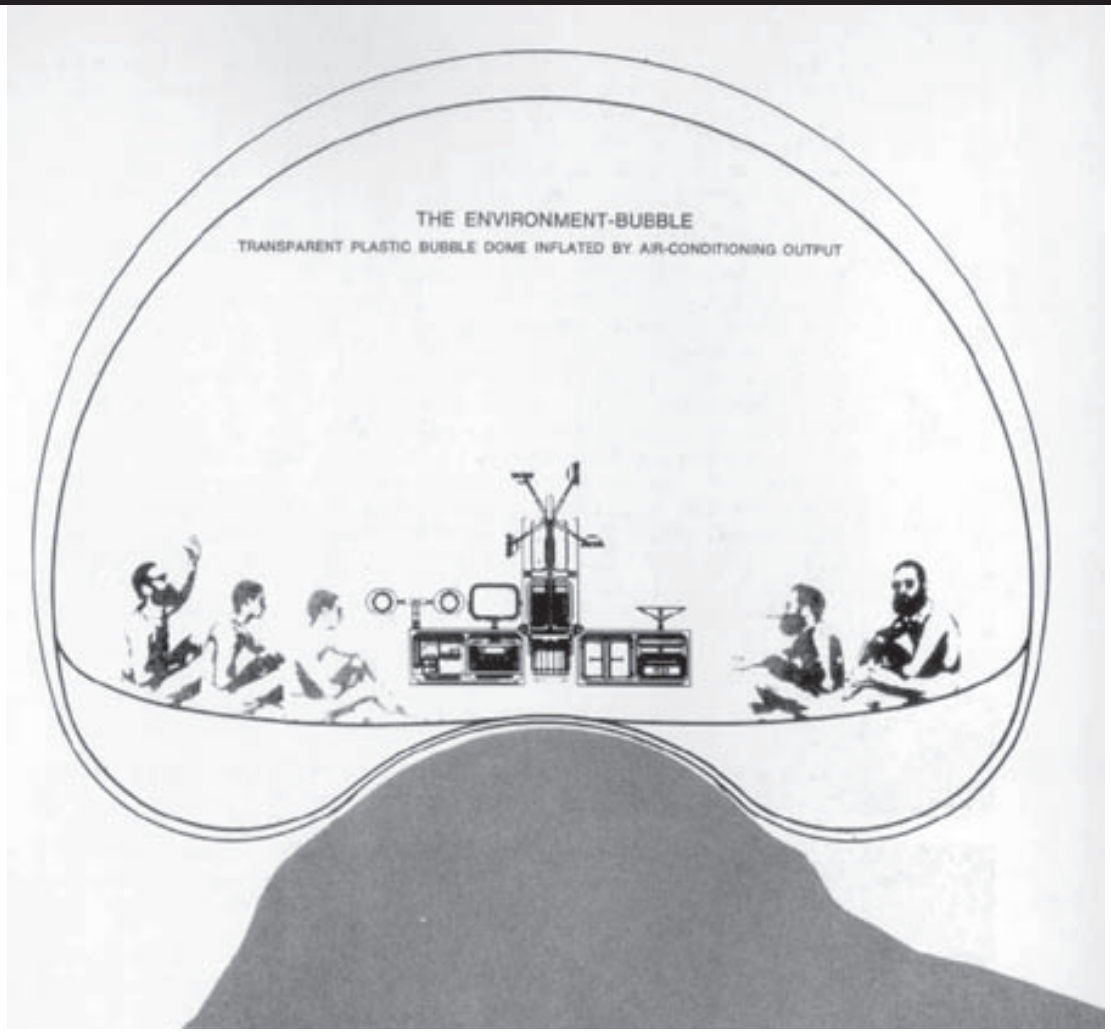
Enjoy..!

In a world more humanely disposed, and more conscious of where the prime human responsibilities of architects lie, the chapters that follow would need no apology, and probably would never need to be written.

It would have been apparent long ago that the art and business of creating buildings is not divisible into two intellectually separate parts -- structures, *on the one hand, and on the other* mechanical services.

Even if industrial habit and contract law appear to impose such a division, it remains false...

Reyner Banham (1922-1988)
The Architecture of the Well-Tempered Environment



The Environment Bubble

Transparent plastic bubble dome inflated by air-conditioning output: In the present state of the environmental art, no mechanical device can make the rain go back to Spain; the standard-of-living package is apt to need some sort of an umbrella for emergencies, and it could well be a plastic dome inflated by conditioned air blown out by the package itself.

Go Means Green

PBS Video Series: ***Design E²***

This week's showing: The Green Apple

Design of Environmental Systems

=

(Environmental) Design

Being “Less Bad” is No Good