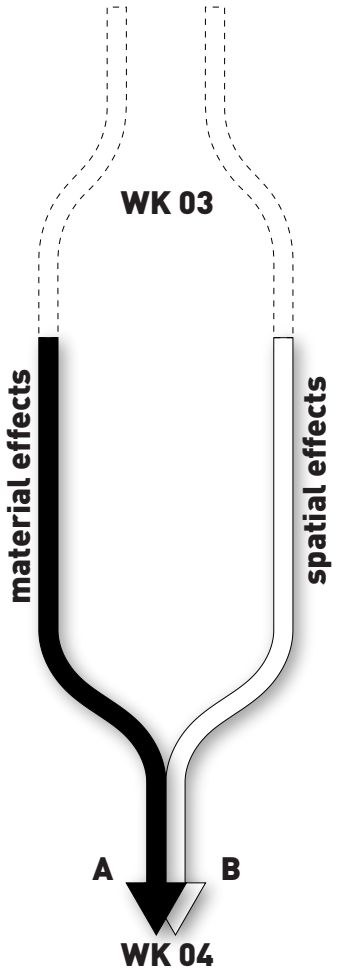
3.0

WEEK 3
SCHEDULE

monday - friday



3.0a
project trajectory

monday

3.0a/b
Presentation: Case Studies

3.1a
Introduction: The Clients

3.1b
Due TUES 1PM Square Footage, Spatial Stacking & Orientation

tuesday

3.2a
Presentation: The Function of Ornament
Due THURS 1PM Material Experiment: Hard & Soft

3.2b
In-Class: Circulation Research
Due THURS 1PM Membrane Exercise: Movin' On Up

wednesday

No Studio July 4th

thursday

3.3a
In-Class: Material Experiment: Hard & Soft in Drawings

3.3b
In-Class: Spatial Conclusions
Stacking & Circulation in Drawings

Field Trip, 3PM Shapiro Cardiovascular Center, Boston, MA
Chan Krieger Sieniewicz / Cannon Design

friday

3.4a/b
Pin Up In Groups

3.0 a/b

PRESENTATION:
CASE STUDIES

monday

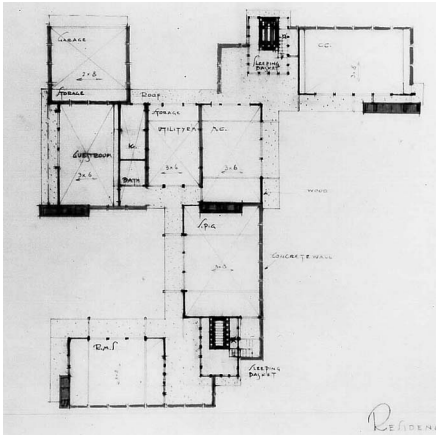
Our next project is a house situated in the quasi-urban fabric of Cambridge, MA. And as you might expect, this is to be no ordinary house. Believe it or not, just two weeks into the Career Discovery curriculum, you have scored the commission of a lifetime: two parties have approached you and asked that you design a house for them, and oddly enough, they want to live in the same built structure.

Naturally, you are excited about this commission, but there are many issues to be explored before designing the actual house. To begin the project, we will investigate three case-study topics in order to understand the context of such a commission and the paths through which the design will be realized. The topics and their case studies are as follows:

THE SHARED HOUSE

As odd as the commission for this project might seem, the *shared house* is not an all together new program in the history of architecture. Friends, professionals and artists often live together in order to share common appreciations and inspire cooperative creativity. The Schindler House is an interesting case study, especially since it was built and shared by two architect-families. The house embodied the architects' interests in climate, materiality, spatial configurations and lifestyle.

Case Study: Schindler House, 1921, Los Angeles, CA

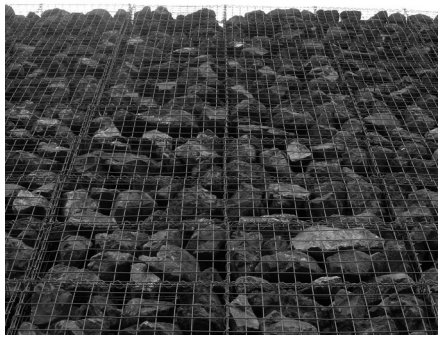


3.0b
shared house, plan, Schindler House

PATH A: MATERIAL EFFECTS / THE FUNCTION OF ORNAMENT

Does architecture need mechanisms to connect it to culture, society and time? Recent experiments in architecture indicate that materiality has a strong affect in doing so. The practices of Herzog & de Meuron and Office for Metropolitan Architecture (OMA), in particular, provide several case studies that demonstrate the potentials of material effects ranging between several scales of architectural depth, including form, structure, layers and skin. Their work serves as an introduction to the first of our two paths in designing the shared house, and as such proposes material "ornament" as a necessary path in our design strategy.

Case Studies: Dominus Winery, Herzog & de Meuron, 1995, Yountville, CA
Prada Epicenter, OMA, 2003, New York City



3.0c
material lust, view of gabions, Dominus Winery

PATH B: SPATIAL EFFECTS / VOLUMETRIC & CIRCULATION INTERLOCK

Though exciting, your commission to build a shared house is riddled with limitations. The City of Cambridge has imposed a series of constraining ordinances, while the clients are asking for the best possible house to share with each other. While these two forces might seem to be at odds, the solution might be found in a creative implementation of spatial effects, namely the clever interlocking of spatial volumes and three-dimensional circulation. We will look at a series of case studies showing interesting methods of merging space and circulation, and later research them in greater detail.

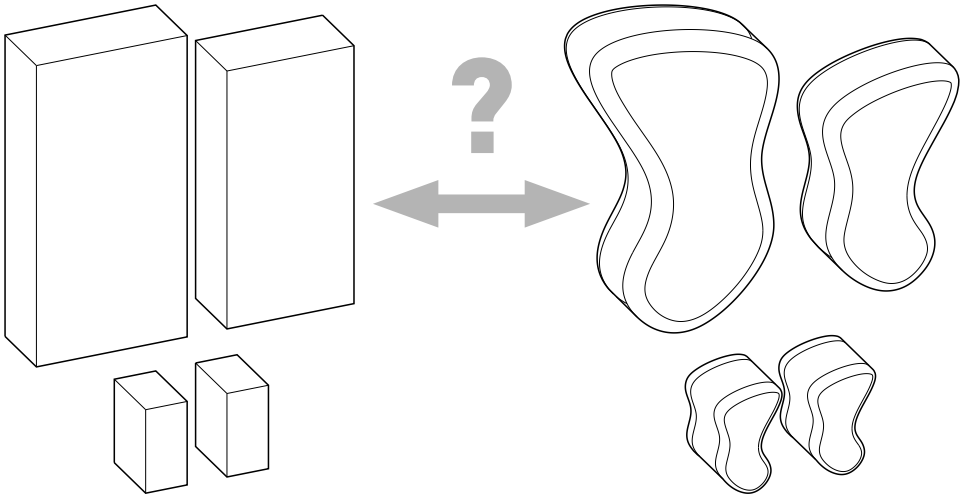
Case Studies: Royal Dutch Embassy, OMA, 2003, Berlin, Germany
Small House, SANAA, 1999, Aoyama, Japan
Mercedes Benz Museum, UN Studio, 2006, Stuttgart, Ger.

3.0d
interlock, Royal Danish Embassy

3.1a

INTRODUCTION:
THE CLIENTS

monday

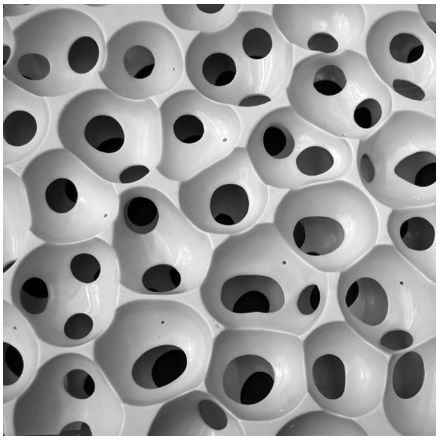


THE HARDS

The Hards are new to town, recently emigrating from Germany and preparing to settle into Cambridge as rigid, but devoted, aesthetes. Naturally, their inclinations are discipline, punctuality, and extreme cleanliness. Because they wear all black, some assume that they are a troop of hired assassins sent to resolve a hidden feud, while others know that they are truly warm and would never hurt a fly. The Hards are most comfortable in spaces that have qualities reminding them of home, including purity, clarity, simplicity and rigor, while at the same time they are eager to assimilate into the Cantabrigian lifestyle, and therefore relax their their rigid ways without losing their edge.

THE SOFTS

The Softs are an interesting famly hailing from many corners. One partner is a Cambridge native and is often seen meddling with local social activists, while the other is originally from Texas and misses the nightly recap of the daily rodeo. Still, the Softs are a happy family and enjoy sharing their space with others. Sometimes, it is even difficult to define the limits of who exactly is in family, but this doesn't bother the Softs at all. That said, they enjoy spaces that offer qualities of flexibility, comfort, multiplicity, and the ability to hold large gatherings. But like all hyper-social people, the Softs want the ability to get some privacy every now and then, both for romance and relaxation as they prepare for the next social gathering.



3.1a
material palette, OMA @ Prada, hard or soft?

THE SHARED HOUSE

Amazing that these two families want to live together, no? The house that they will share is up to you to design, but it must work to satisfy both families' very different needs and preferences. It is up to you to decide how the house is arranged spatially, including the interlock of volumes and circulation, as well as the degree to which the two families share each others' space.

Meanwhile, both couples demand that their shared house reflect the families' different interests in materiality, but that this difference be expressed using a consistent material palette. This week, you will experiment with materials and discover ways to meet these difficult demands. The Hards and Softs are eager to see what you propose, but since they are all busy people, they have arranged for your studio instructor to be their representative in critiquing the house's design. Please report to him daily, and make the Hards and Softs very proud with your diligent work.

ASSIGNMENT: **DESIGN the structure of each family (single, coupled, newlywed, divorced, widowed, number of children, etc.)**

DUE DATE: **tuesday / july 3, 2007 / 1pm**

3.1b

SQUARE FOOTAGE,
SPATIAL STACKING &
ORIENTATION

monday

Last weekend, you assembled a series of volumes and organized them in two symbiotic groups according to some logic. Today, we are going to revisit this logic with a spatial and programmatic agenda.

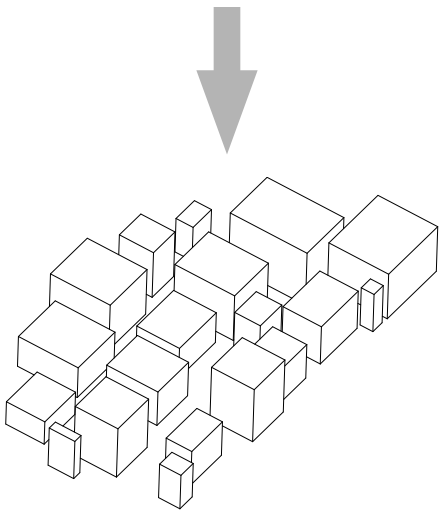
STEPS

1) Match each VOLUME that you have built to a PROGRAM in the following list, and discreetly label each volume with its programmatic function. Remember that both clients must have at least one of each programmatic element. You are free to determine the function of the remaining spaces.

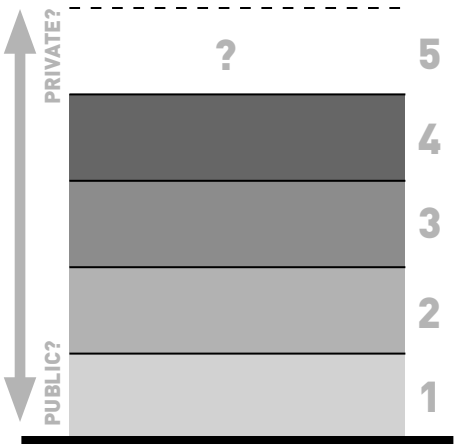
+BEDROOM 1 (MAIN)
+BEDROOM 2
+BATHROOM 1
+BATHROOM 2 (1/2 BATH)
+KITCHEN
+DINING ROOM
+LIVING ROOM
+STORAGE

2) Using only your 4 largest programmatic volumes, RANK each in terms of privacy from 1-4 (**1=PUBLIC, 4 =PRIVATE**). Do this separately for each client as they will differ.

HARDS	SOFTS
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____



3.1b
volumes & program



3.1c
privacy & access gradient

3) Next, combine the two rankings and RE-RANK on a new scale of 1-8, keeping the original order of each client but now considering both at once.

	PROGRAMMATIC VOLUME	CLIENT
1.		
2.		
3,		
4.		
5.		
6.		
7.		
8.		

4) Use these rankings to establish general locations and arrangements of the 2 combined houses. Consider the **client descriptions** and the **site boundaries** both in plan and section, including **orientation** (N/S/E/W, buildings), **context** (street, buildings), **environment** (light, sound, exposure), and **access** (top v. bottom).

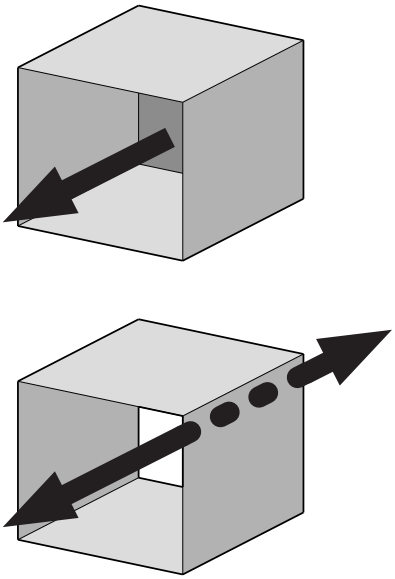
ASSIGNMENT: **BUILD (2) two new arrangements of the volumes including all programmatic spaces and the logics you developed from the issues determined in steps 1-4. SCALE: 1/2" = 1'-0".**

RULES:

+ Model the 2 houses with different materials (e.g. white & black foam core).

+ Only 2 volumes can touch the ground (any size) and they must leave a 12'-0" driving clearance at ground level.

+ Each client must face all 4 sides of the site.



3.1d
volumetric orientation, 1-2 sides removed

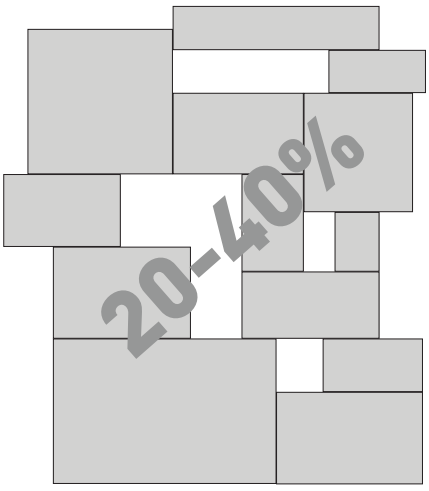
RULES CONT'D:

+ For each house, remove certain sides of the volumes to give the rooms local a orientation (1-2 boxes w/1 side removed, 1-2 boxes w/2 sides removed, 1-2 boxes with a "punched" window - *per house*).

+Obey all dimensional limits as given by the site plan.

+ To assure outdoor deck space, 20-40% overall porosity is encouraged, the City of Cambridge has agreed to allow a taller house if significant views and light pass through the house.

DUE DATE: **tuesday / july 2,2007 / 1pm**

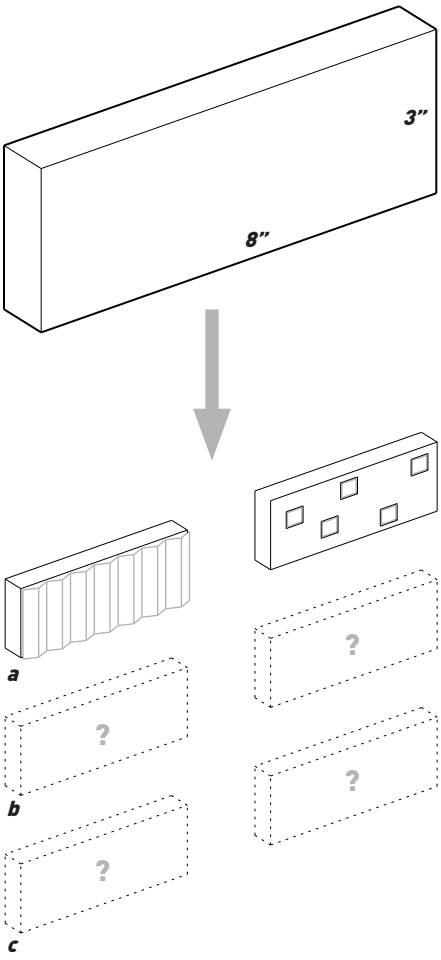


3.1e
20-40% porosity

3.2a

MATERIAL EXPERIMENT:
HARD & SOFT

tuesday



3.1b
volumes & program

As stated in **3.1a**, both clients ask that their respective spaces reflect their material inclinations. Due to financial constraints, however, it is necessary to use the same material palette for both clients. You should proceed with a series of material experiments, which will hopefully yield dynamically different readings of the same material, the steps for which are as follows:

STEPS

1) Select (2) two material pairs/triads and (2) two material singles from the list below. The (2) two singles will act as a third pair.

PAIRS	SINGLES
plaster / foam / acetone	corrugated plastic
foam / acetone	thick chipboard
plexi / metal screen	felt
plexi / light gel	light gel
light gel / metal screen	
wood / screen	

2) Select (3) three action verbs from the list below and match them arbitrarily with the (3) three pairs of materials.

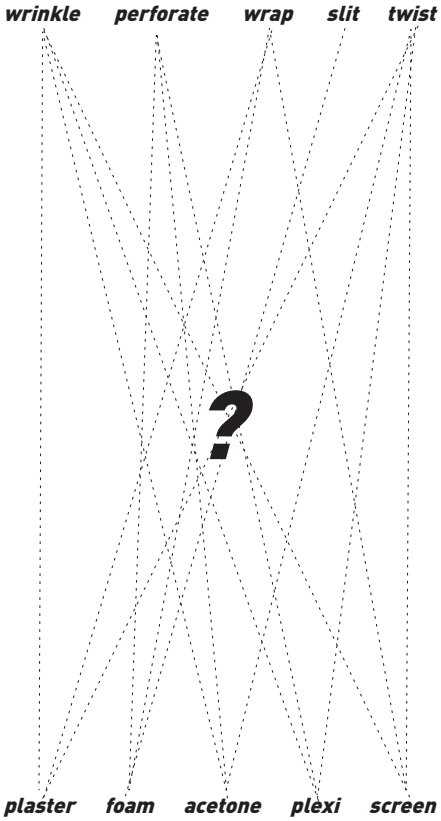
VERBS	
wrinkle	slit
perforate	cast
wrap	bend
slit	eat
twist	weave

3) Using the materials in your selected pairs, and the action verbs that you choe to act on them, make (2) 3"x8" wall-samples per pair. The first sample should be "hard" and the second should be "soft." Think, "how can a hard material be soft? How can a soft material be hard?" In the end, you will have (6) six total wall samples.

4) The most important step of all: **BE SURE CLEAN UP ANY MESS!**

ASSIGNMENT: **produce (6) six wall material samples using a combination of materials and action verbs. when you are finished, display the samples neatly on your board.**

DUE DATE: **thursday / july 5, 2007 / 1pm**



3.2b
material lust, makin' it with the matrix

3.2b

CIRCULATION RESEARCH:
MOVIN' ON UP,
INTERLOCK STYLE

tuesday

The interlock of volumes and circulation will be the key to resolving the spatial effects of the house shared by the Hards and the Softs. In this exercise your task is to create vertical connections (stairs/ramps) between the programs in each unit. Each floor of each unit must be accessible, and each unit must maintain its own distinct circulation, as each technically is a separate house. Traditionally, the most valuable "real estate" in a home is the exterior wall due to its connection to air, light and views. We will be establishing most of our circulation towards the center, however there may be opportunities to shift the circulation "trajectory" to the periphery (*think, OMA's Royal Dutch Embassy*).

STEPS

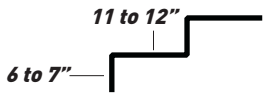
1) Using your most successful aggregation of program volumes, BUILD (1) one single, folded plane to define the separation between the two houses. This plane can be twisted, folded, bent, etc. Use a different material from the ones you used to make the houses, so that the plane is clearly visible.

2) Next, consider "delaminating" this surface so that particular spots can be occupied by vertical circulation. At lease HALF of the circulation in each unit must be concealed in the dividing surface. This means that your stairs/ramps will slip inside the surface, making it thicker.

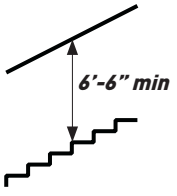
3) Build this surface as an "armature membrane" with stairs/ramps inside, and rebuild your volumes around the armature such that the circulation sequence provides access to each of the rooms.

NOTES:

+ stairs must have a 6-7" rise and 11-12" run per step. for simplicity, a 6:12 ratio is easy to follow



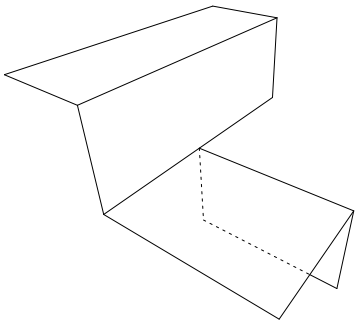
+ stairs require vertical headroom for clearance, yours will be no lower than 6'-6"



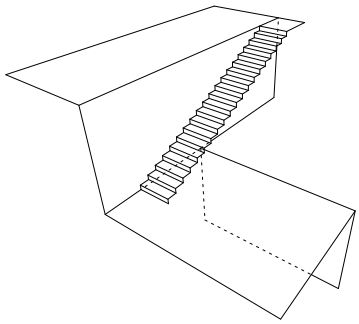
NOTES, CONT'D: + deciding which stairs/ramps go inside of walls and which remain exposed may reinforce your ideas public v. private program

ASSIGNMENT: produce (1) "armature membrane" of circulation providing separate stairs/ramps servicing both houses, rebuild your volumes around the armature such that the circulation sequence provides access to each of the rooms

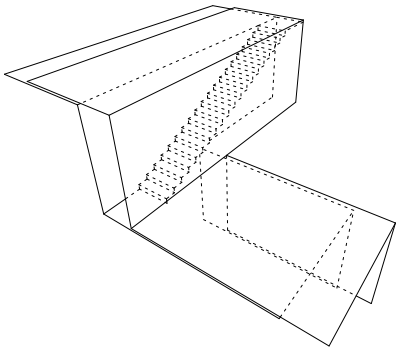
DUE DATE: thursday / july 5, 2007 / 1pm



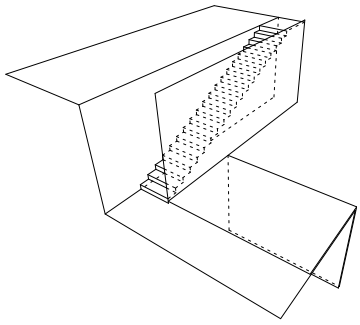
DIVIDING MEMBRANE



EXPOSED STAIR



STAIR SLIPPED BETWEEN SURFACES



CONCEALED STAIR

3.2c
circulation concealment

3.3 a/b

DRAWING & MODELING:
THE CLEAN & THE DIRTY

weekend

So far, you have modeled your spatial aggregation and the circulation membrane, plus several material experiments for both the Hards and the Softs. Now it is time to further resolve this work using a system of interrelated drawings. Plus, you will build the context for your project by building a group site model.

ASSIGNMENT A/B: SITE MODEL

build a group model of the site using the materials listed below. a plot with the extents of the model will be provided. the scale is to be 1/4"=1'-0".

- **BASE: (4) layers of 1/2" gatorboard**
- **EXISTING BUILDINGS: foam core boxes with 1/32" chip skin (include minimal detail for exst. buildings with chip layers, such as windows, doors, parapets, etc.)**
- **GREEN/PAVING: layered 1/16" chip**

ASSIGNMENT A: FACADES / MATERIAL EFFECTS

obtain materials for next week's facade development. you will need some (or all) of the following:

- **1/32" plexiglass**
- **light gel (grey-tone only)**
- **corrugated plastic**
- **foam core (white or black)**
- **thin square dowels**
- **metal screen**
- **material of your choice**

ASSIGNMENT B: DRAWINGS / SPATIAL EFFECTS

study your building with a family of interrelated drawings. draw the Hards with toned poche, the Softs without poche. do all of the following drawings @ 1/4"=1'-0" scale:

- **plans (one per floor)**
- **sections (at least two, (1) cross & (1) long)**
- **exploded axonometric of stairs & volumes**

DUE DATE: monday / july 9, 2007 / 1pm