Damages of Demolition

The Future of Adaptive Reuse

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Table 12. Number of Years Required for New Buildings to Overcome Climate Change Impacts from Construction Process

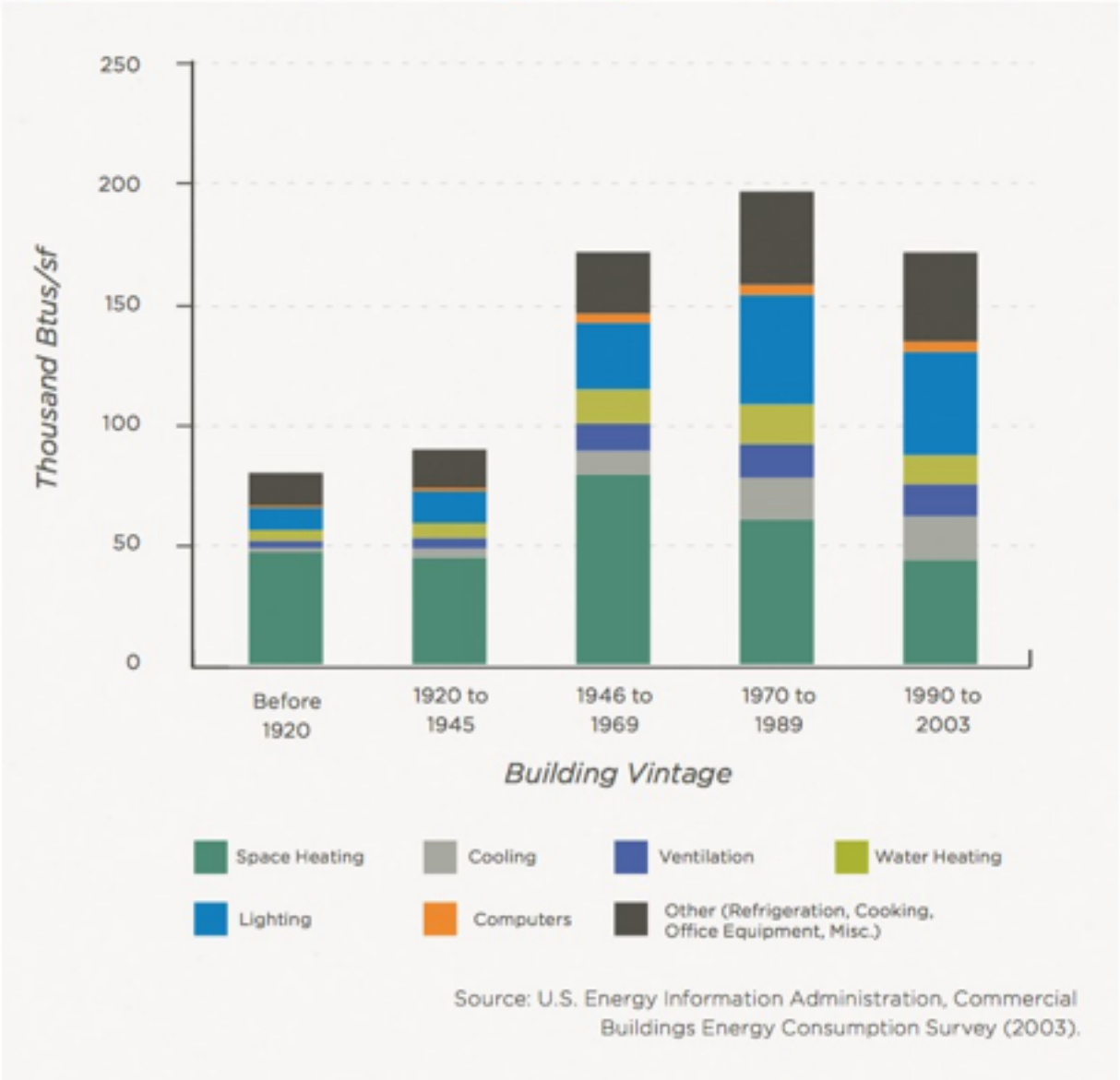
According to this study, it takes 10 to 80 years for a new building that is 30 percent more efficient than an average-performing existing building to overcome, through efficient operations, the negative climate change impacts related to construction. This table illustrates the number of years required for different energy efficient, new buildings to overcome impacts.

Building Type	Chicago	Portland
Urban Village Mixed Use	42 years	80 years
Single-Family Residential	38 years	50 years
Commercial Office	25 years	42 years
Warehouse-to-Office Conversion	12 years	19 years
Multifamily Residential	16 years	20 years
Elementary School	10 years	16 years
Warehouse-to-Residential Conversion*	Never	Never

*The warehouse-to-multifamily conversion (which operates at an average level of efficiency) does not offer a climate change impact savings compared to new construction that is 30 percent more efficient. These results are driven by the amount and type of materials used in this particular building conversion. The warehouse-to-residential conversion does offer a climate change advantage when the energy performance levels of new and existing building are assumed to be equal (see Figure 14). Thus, it may be particularly important to retrofit warehouse buildings for improved energy performance while renovating them. Furthermore, care should be taken to select materials that maximize environmental savings.

1. Economics
2. Structure
3. Culture

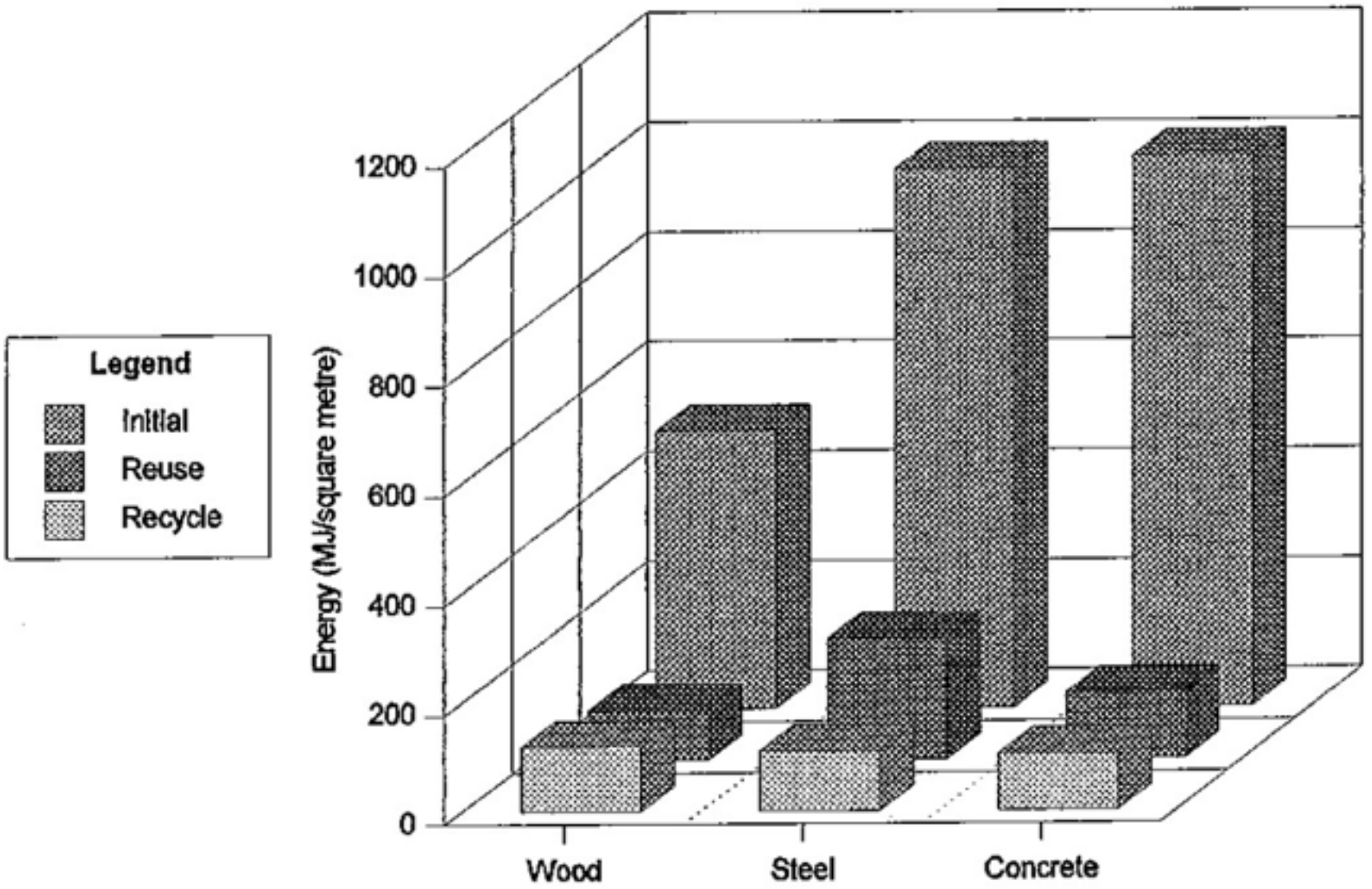
Figure 3: Commercial Building Energy Use by Vintage



Source: U.S. Energy Information Administration, Commercial Buildings Energy Consumption Survey (2003).

Figure 7.1a Relative Energy Comparison

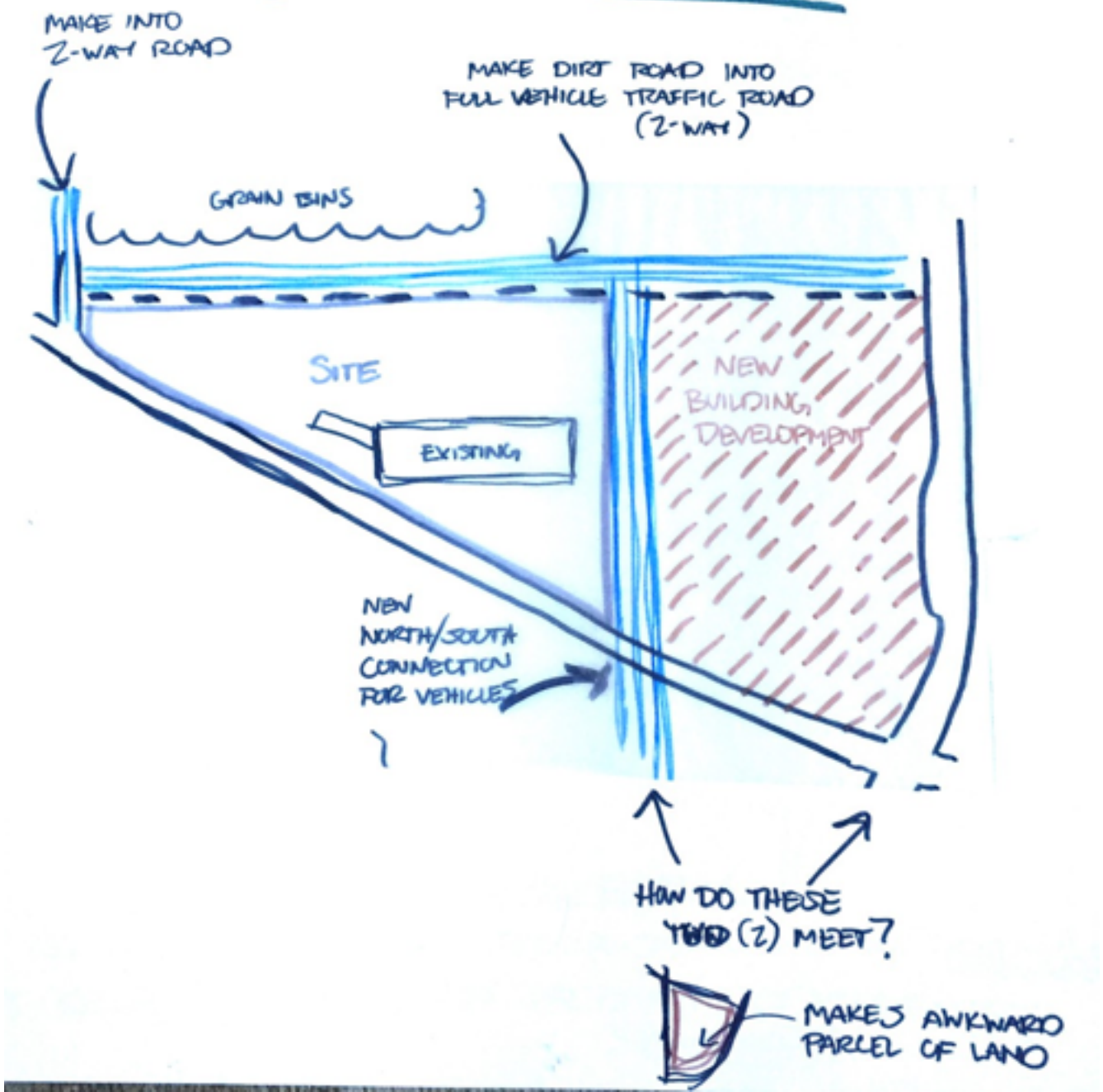
Recycling/Reuse versus Embodied

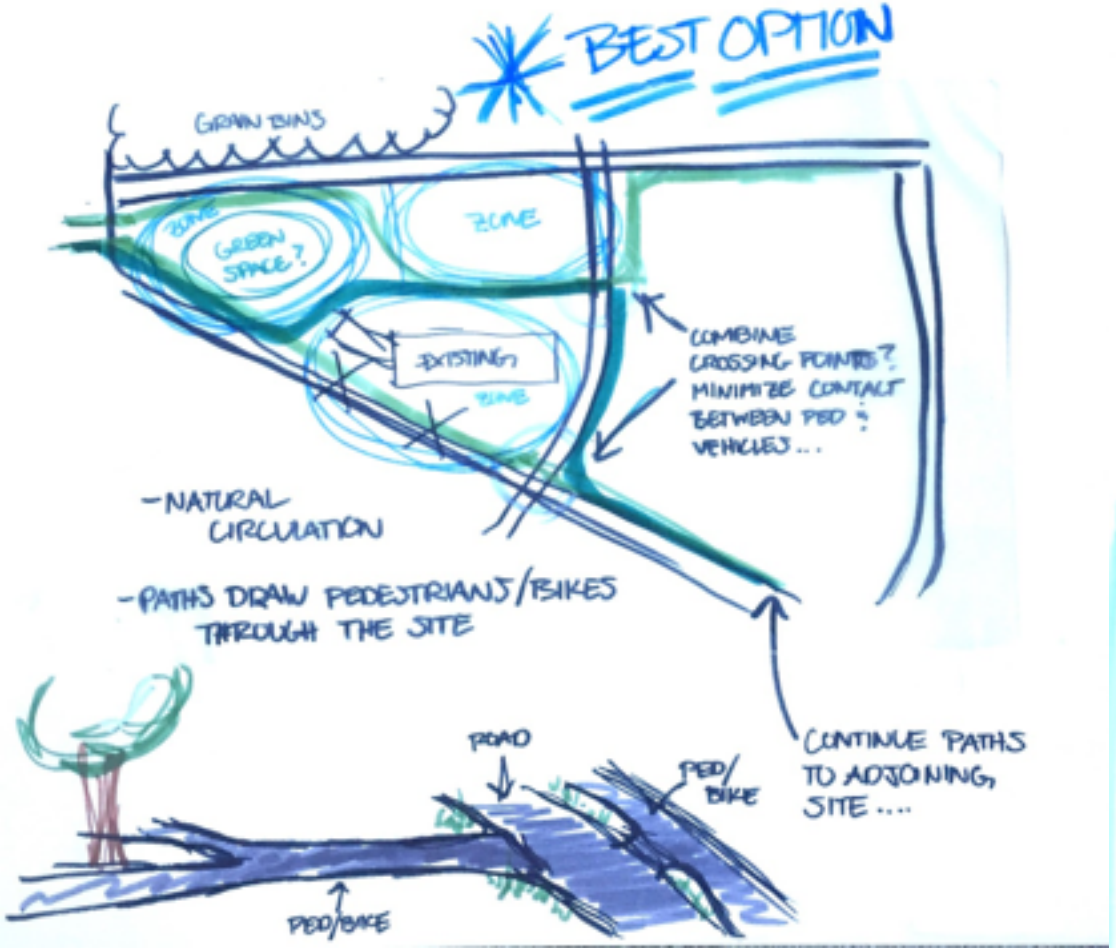


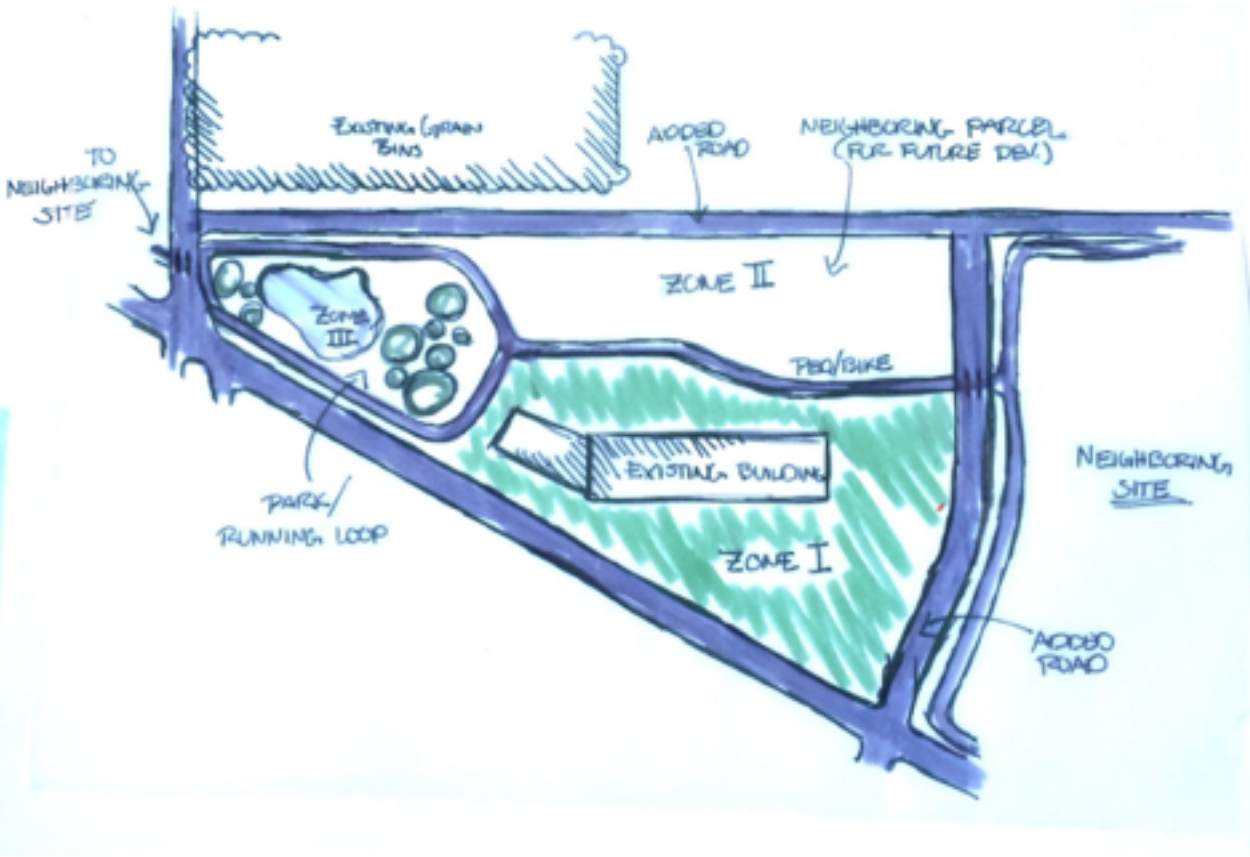
‘ Intelligence is the ability to adapt’ – Stephen Hawking

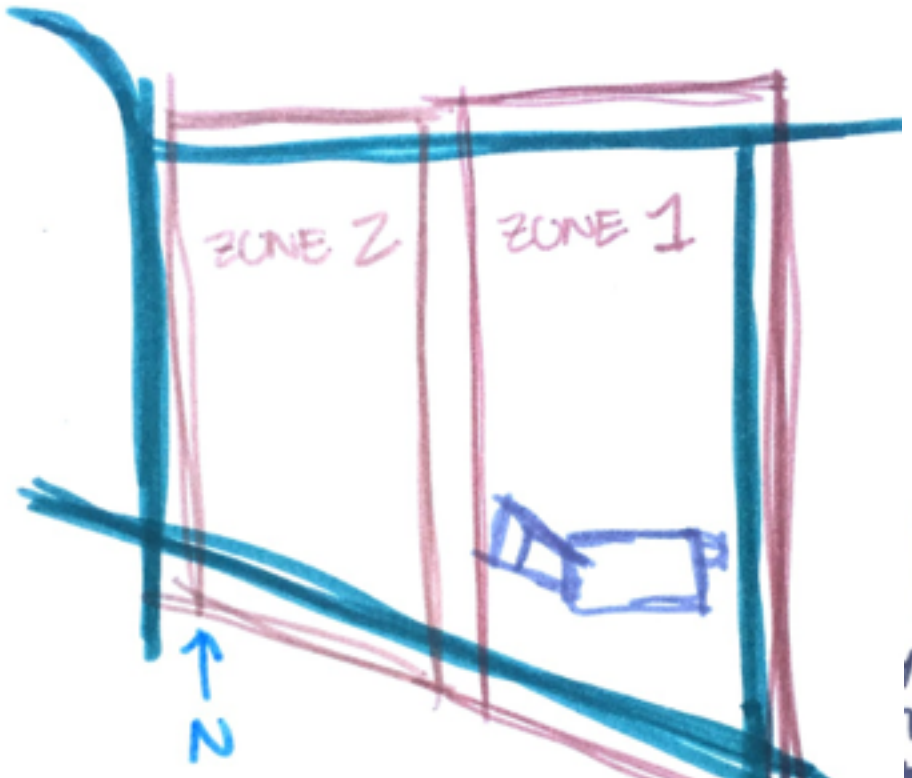
6 stories
4 stories
6 stories
2 stories
university transitway
park
5 stories
green fourth
N
6 stories

SITE ACCESSIBILITY (VEHICLES)

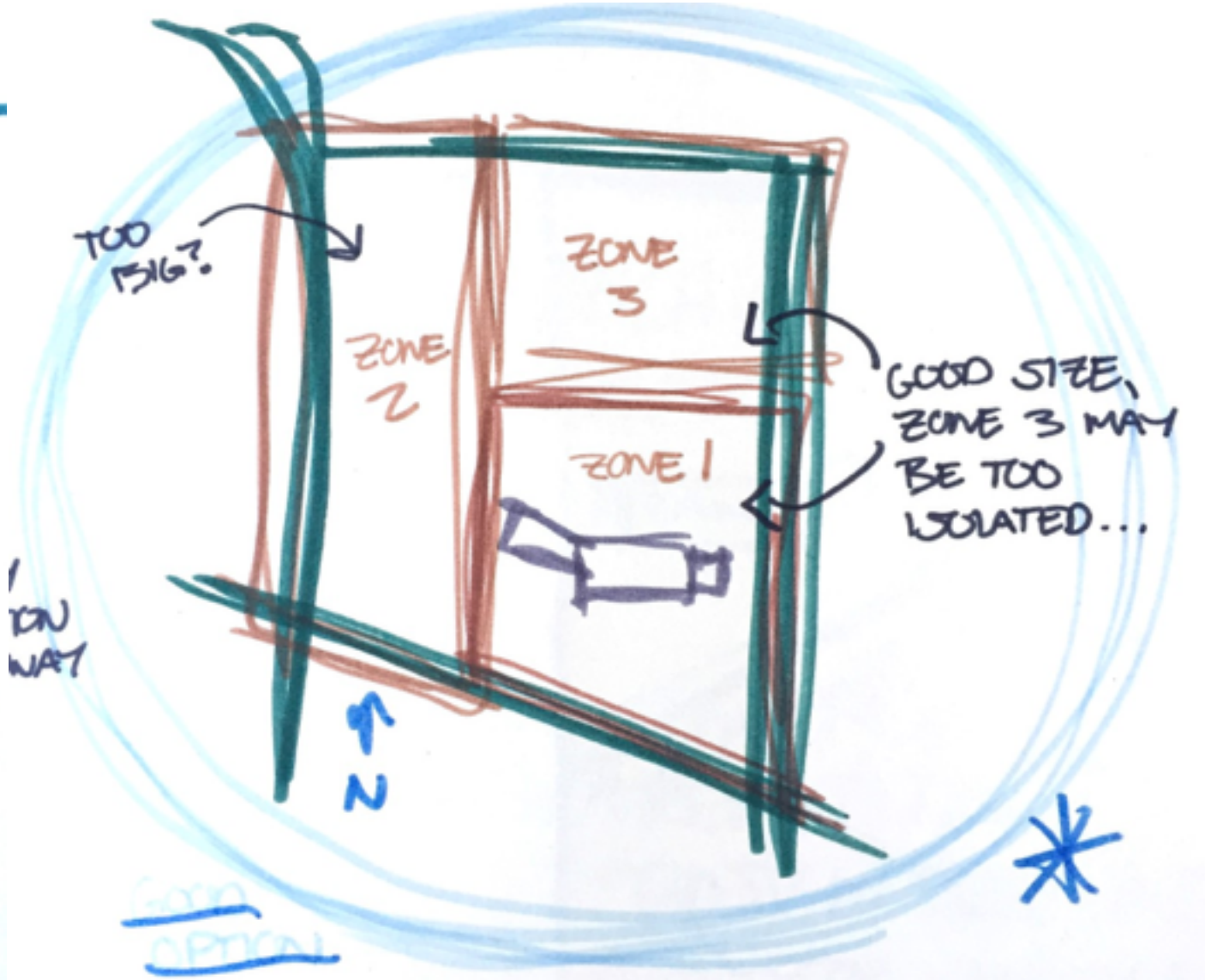


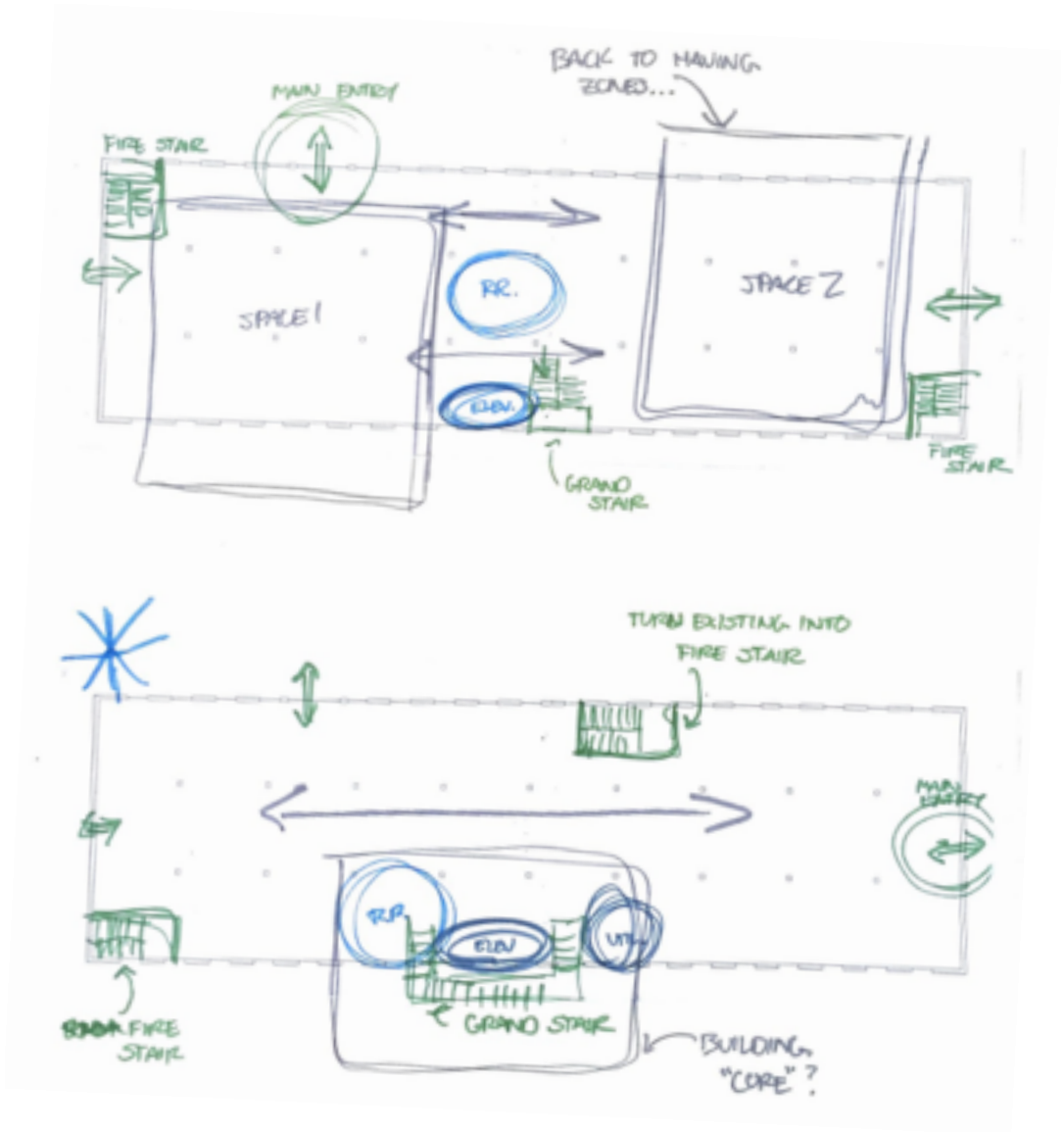

BEST OPTION
GRAIN BINS
ZONE
GREEN SPACE?
ZONE
EXISTING
ZONE
COMBINE CROSSING POINTS? MINIMIZE CONTACT BETWEEN PED + VEHICLES...
-NATURAL CIRCULATION
-PATHS DRAW PEDESTRIANS/BIKES THROUGH THE SITE
CONTINUE PATHS TO ADJOINING SITE...
ROAD
PED/BIKE
PED/BIKE

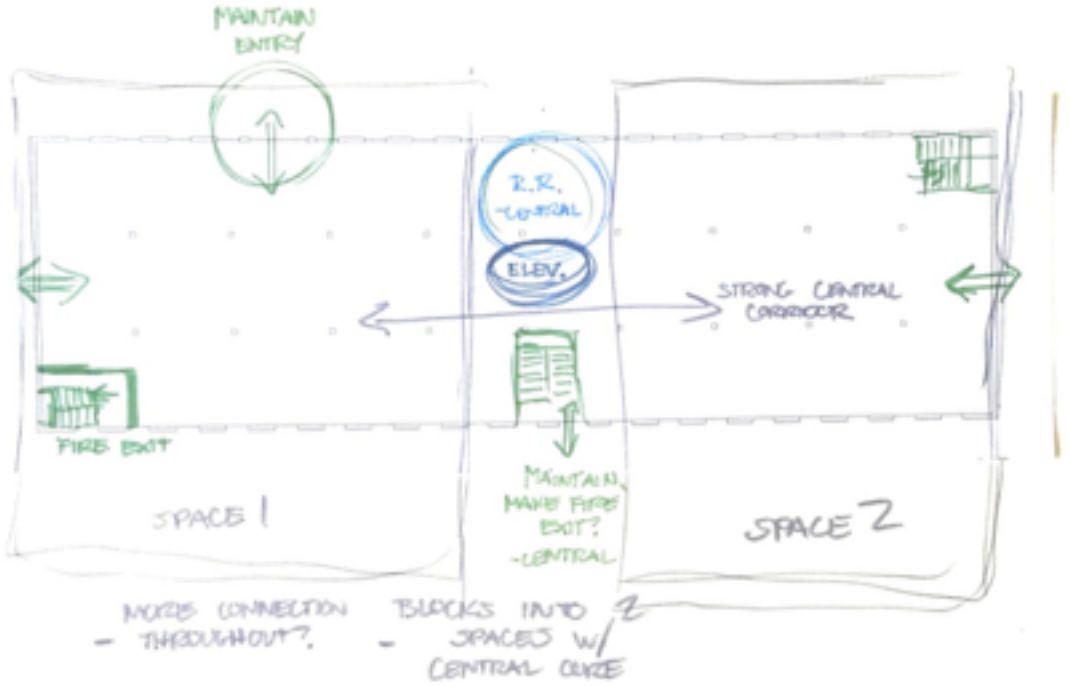

TO NEIGHBORING SITE
EXISTING GRAIN BINS
ADDED ROAD
NEIGHBORING PARCEL (FOR FUTURE DEV.)
ZONE II
ZONE III
PED/BIKE
EXISTING BUILDING
NEIGHBORING SITE
PARK/ RUNNING LOOP
ZONE I
ADDED ROAD

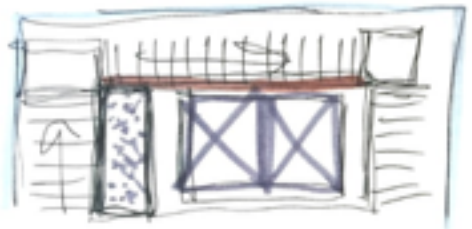


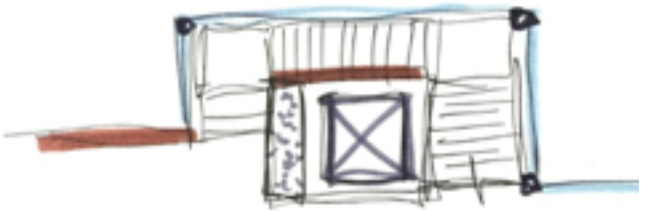
- 2 ZONE OPTION GIVES LARGER LOTS, MORE GREEN SPACE
- TOO BIG TO MANAGE?
- INAPPROPRIATE DENSITY FOR THIS AREA OF MINNEAPOLIS...

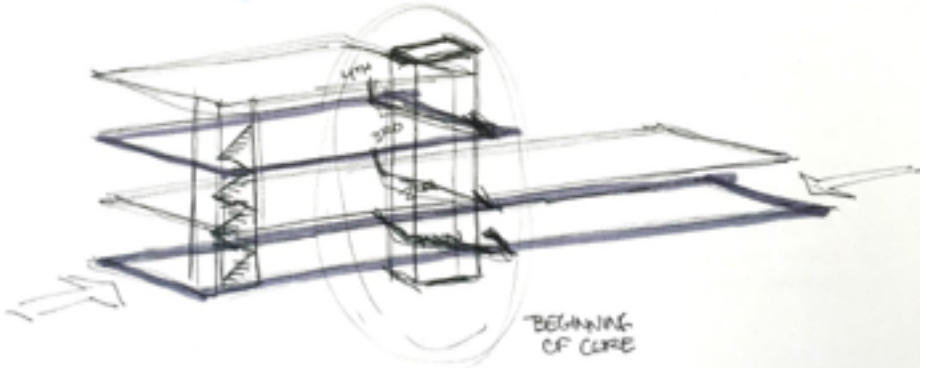


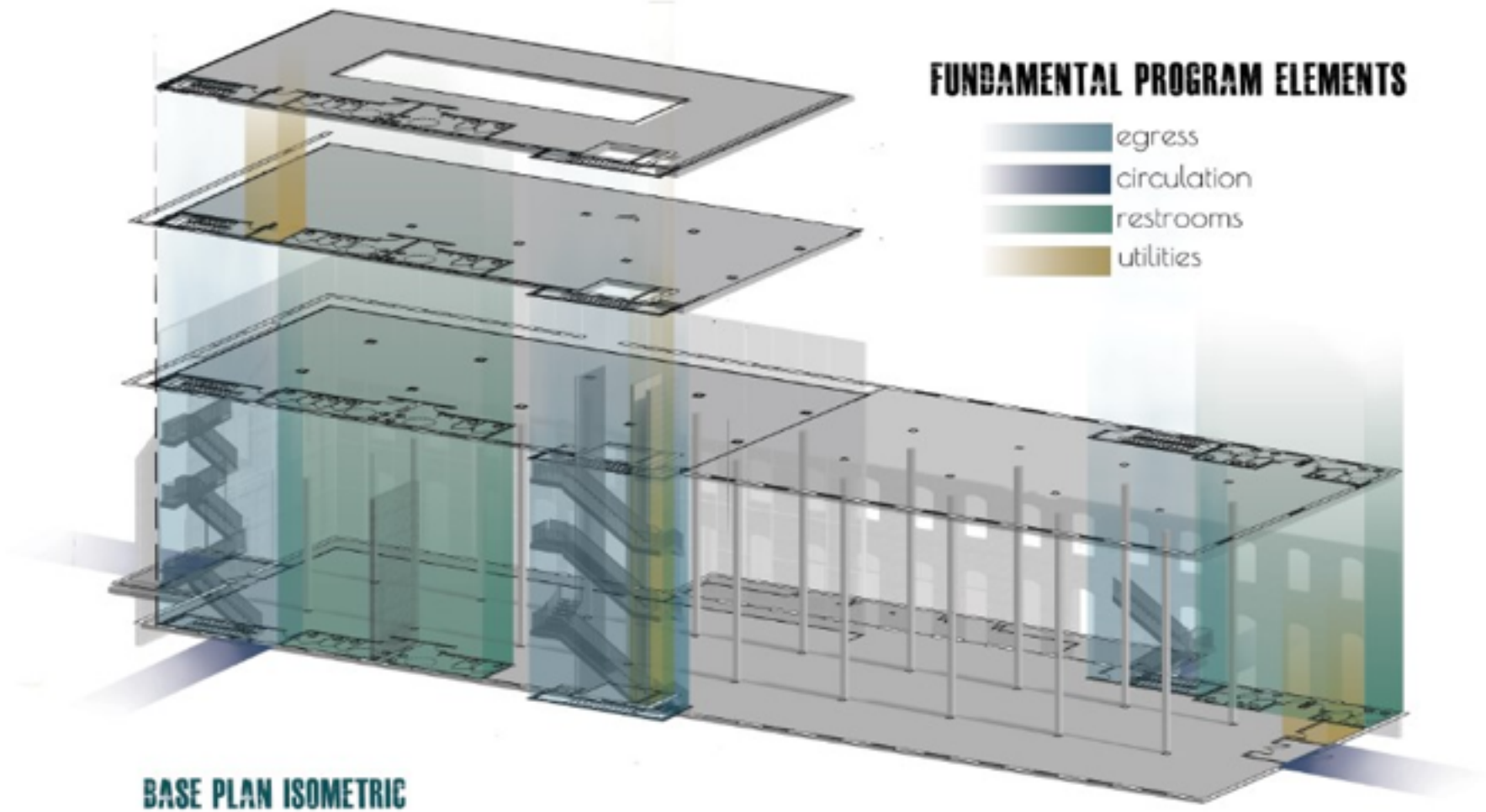

BACK TO HAVING ZONED...
MAIN ENTRY
FIRE STAIR
SPACE 1
RR.
SPACE 2
ELEV.
GRAND STAIR
FIRE STAIR
TURN EXISTING INTO FIRE STAIR
MAIN ENTRY
RR
ELEV
GRAND STAIR
BUILDING "CORE"?


MAINTAIN ENTRY
R.R. -CENTRAL
ELEV.
STRONG CENTRAL CORRIDOR
FIRE EXIT
SPACE 1
MAINTAIN MAKE FIRE EXIT? -CENTRAL
SPACE 2
MORE CONNECTION - THROUGHOUT?
BLOCKS INTO SPACES W/ CENTRAL CORE

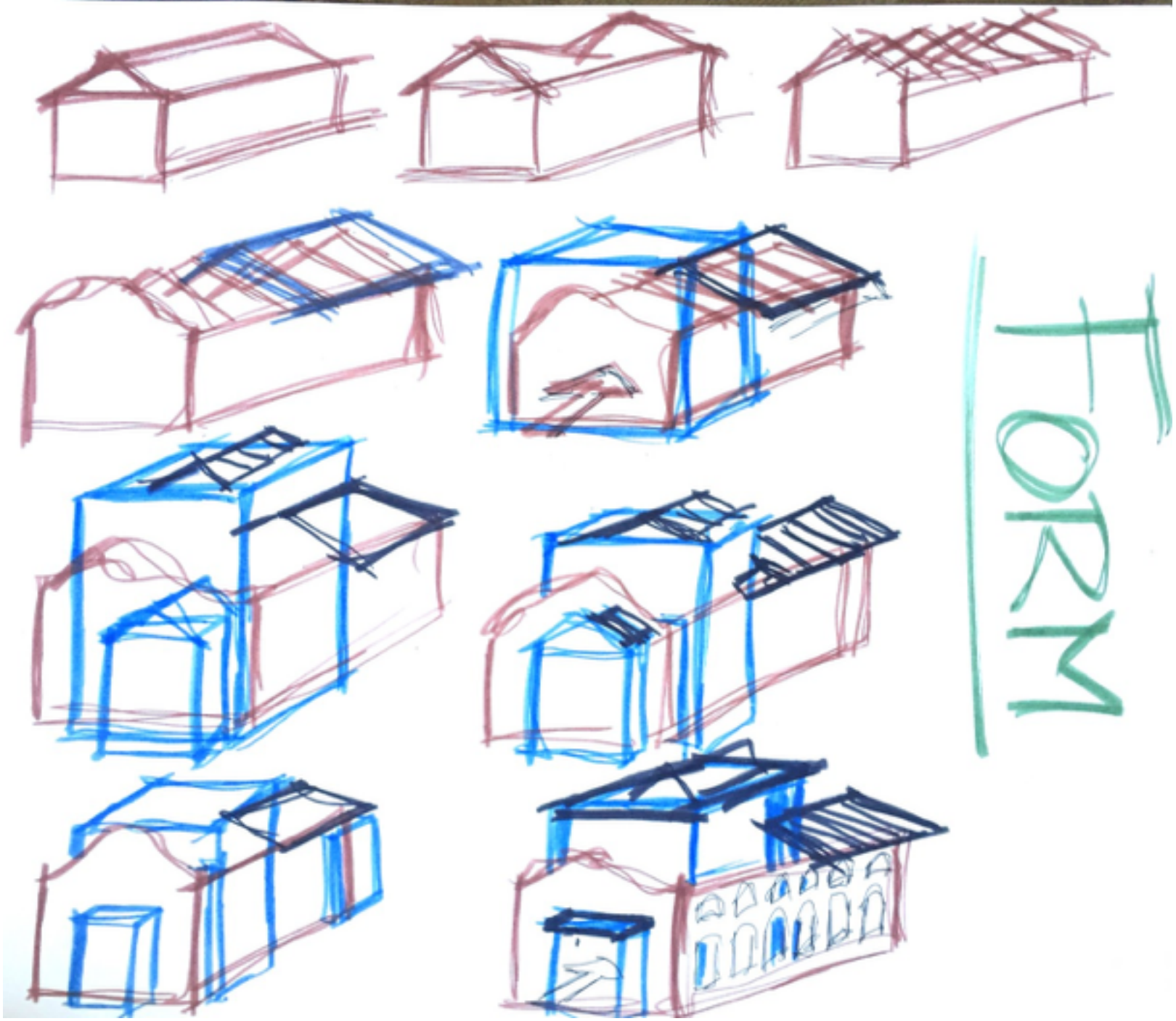


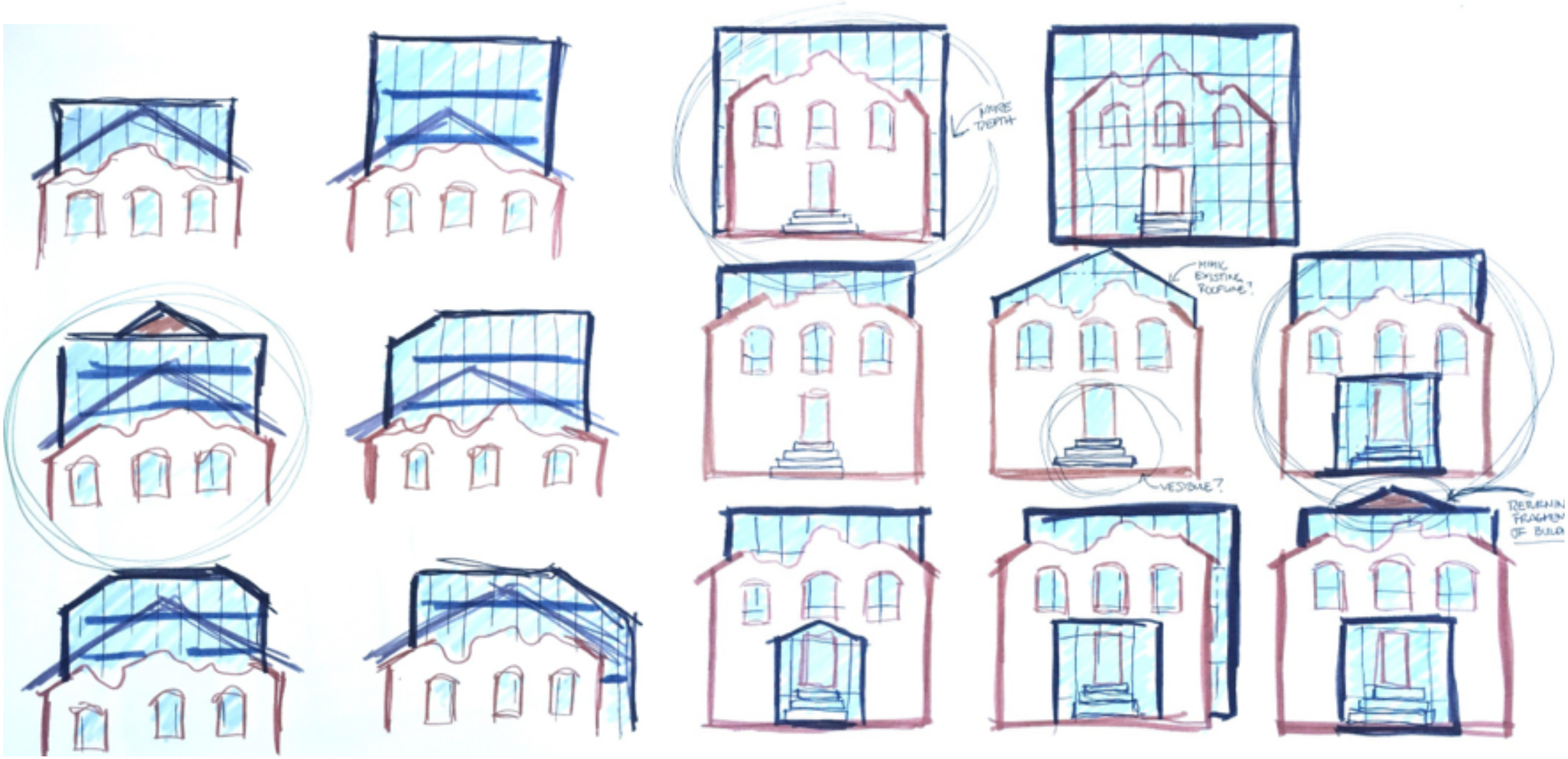



BEGINNING OF CORE



BASE PLAN ISOMETRIC


FORM


MORE DEPTH
MIMIC EXISTING ROOFLINE?
VESTIBULE?

EDUCATIONAL scale 1/2"=1'-0"

Q & A