

MIXING CONCRETE

TIME: 2 HR (5 DAYS TO DRY)

COST: 50\$

MATERIALS:

CONCRETE
WATER
DENSITY FOAM
METAL WIRE
JOHNSON PASTE WAX
PLAKSI GLASS 1/16

SOFTWARE: PHINO 5.0

MACHINING:

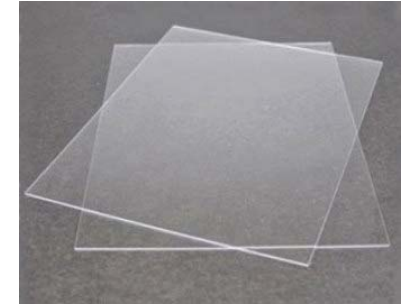
Roland MDX-540 3-Axis CNC Mill
Universal PLS, X-660 and ILS 12-150
Laser Cutters

TOOLS:

PROTECTIVE GLOVES
DUST MASK
PLASTIC SHEET
BOW
SNIPS
BRUSH
FOAM FORM
TROWEL

EDITION:

GLASS BALLS
CRAFT KNIFE
COOKING OIL
TAPE
DOUBLE-SIDED TAPE
PTE BUTTLE AND
KETCHUP BOTTLE
PLASTIC BAG
PROTECTIVE LEATHER GLOVES



STEP BY STEP:

STEP 1:
PREPARE ALL MATERIALS AND USE PROPER PROTECTIVE GLOVES, A DUST MASK AND USE A PLASTIC SHEET WHEN MIXING CONCRETE



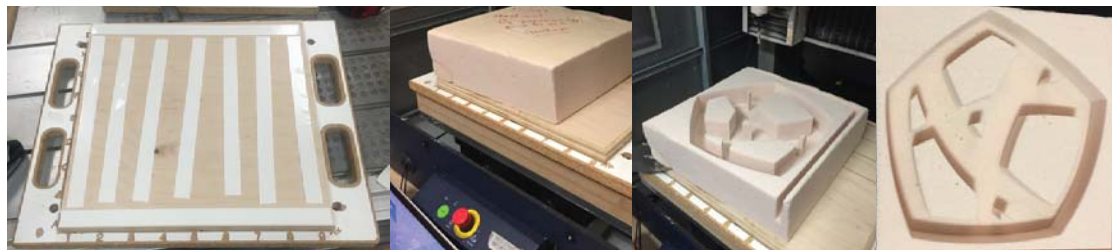
TIME: 15MIN

STEP 2: STIFF CONCRETE
4 PARTS CONCRETE + 1 PART WATER



TIME: 5 MIN

STEP 3: MILL THE FORMWORK
USE DOUBLE-SIDED TAPE TO PLACE DENSITY FOAM ON THE TEMPLETE
PLACE DENSITY FOAM (12X12X4 INCH) TO THE TEMPLETE AND
USE Roland MDX-540 3-Axis CNC Mill MACHINE TO MILL YOUR FORM (2INCH THIK)



TIME: 2 HR

STEP 4: PREPARATION FOR POURING OF CONCRETE
APPLY JOHNSON PASTE WAX INTO DENSITY FOAM FORM



TIME: 5 MIN

STEP 5: POUR CONCRETE INTO FORMWPRK
POUR CONCRETE INTO DENSITY FOAM FORM AND USE PLASTIC BEG WITH SMALL CUT IF YOU NEED TO
USE A HAND COMPACTION TO OBTAIN MAXIMUM DENTISY
AND TO GET PROPER SHAPE BY ENSURING THAT CONCRETE TO REACH EVERY CORNER OF THE FORMWORK



TIME: 5 MIN

STEP 6: REINFORCE CONCRETE

CUT METAL WIRE WITH THE SNIPS (SHOULD BE PREPEARED)
PIECES ON METAL SHOLD MATCH THE LENTH OF YOUR FORMWORK
PLACE METAL WIRES INTO FORMWORK AND POUR THE REST OF MIXED CONCRETE



TIME: 15 MIN

STEP 7: FINISHING CONCRETE FORM

WAIT FOR THE CONCRETE T STIFFEN AND FOR BLEEDWATER TO ESCAPE AND DISAPPEAR
EDGE ALONG FORM EDGES TO DENSIFY AND COMPACT THE CONCRETE, WHICH MINIMIZES EDGE CHIPPING
USE METAL TROWEL TO CREATE A SMOOTH, HARD SURFACE
LEAVE IT TO SET FOR AT LEAST 2 DAYS

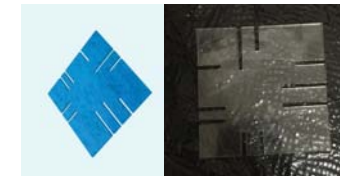


TIME: 10 MIN

DECORATIVE CUBE

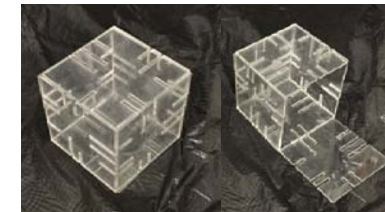
STEP 1: DESIGN DETAIL IN RHINO SOFTWARE

THEN USE Universal PLS, X-660 and ILS 12-150 Laser Cutters TO CUT PAZZLE DETAILS (3X3 INCH) FROM PLAKSI GLASS (1/16 INCH THIK)



TIME: 3 HR

**STEP 2: USE INVISIBLE TAPE TO BUILD THE CUBE FROM THE DETAILS
BUT LEAVE THE CUBE UNCLOSED FROM OF THE SIDES**



TIME: 30 MIN

**STEP 3: GET SMALL PT BUTTLE , FIELD IT WITH WATER AND SPRAY IT WITH THE COOKING OIL
PUT EXTRA TAPE ON THE OUTSIDE OF THE CUBE**

PLACE THE PT BOTTLE INTO THE CUBE AND POUR RUNNY CONCRETE (5 PARTS CONCRETE + 2 PARTS WATER)
USE IF YOU NEED TO POUR THE CONCRETE THROUGH A NARROW OPENING INTO A FUNNEL, ETC

**STEP 4: USE SOME PRESS TO KEEP PT BOTTLE ON THE BOTTOM OF THE CUBE
LEAVE IT AT LEAST FOR 2 DAYS**



TIME: 30 MIN

DECORATIVE BALL

STEP 1: AS AN ADDITIONAL TOOLS, YOU WILL NEED A LEATHER PROTECTIVE GLOVES, HAMMER, SCREWDRIVER, PROTECTIVE GOGGLES, CRAFT KNIFE AND A GLASS BALL



STEP 2: POUR RUNNY CONCRETE (5 PARTS CONCRETE + 2 PARTS WATER) INTO KETCHUP BOTTLE THEN POUR CONCRETE INTO THE GLASS BALL LEAVE IT TO SET FOT AT LEAST 2 DAYS



STEP 3: COOL THE BALL FOR 1 HOUR BEFORE YOU BREAK THE GLASS (YOU CAN CAN USE THE FRIDGE)



TIME: 10 MIN

TIME: 30 MIN

TIME: 60 MIN

STEP 4: POUR BOILING WATER OVER THE GLASS TO CRACK IT. SHOULD BE CARIFUL WHEN YOU BREAK THE GLASS. WEAR THICK PROTECTIVE GLOVES AND PROTECTIVE GOGGLES

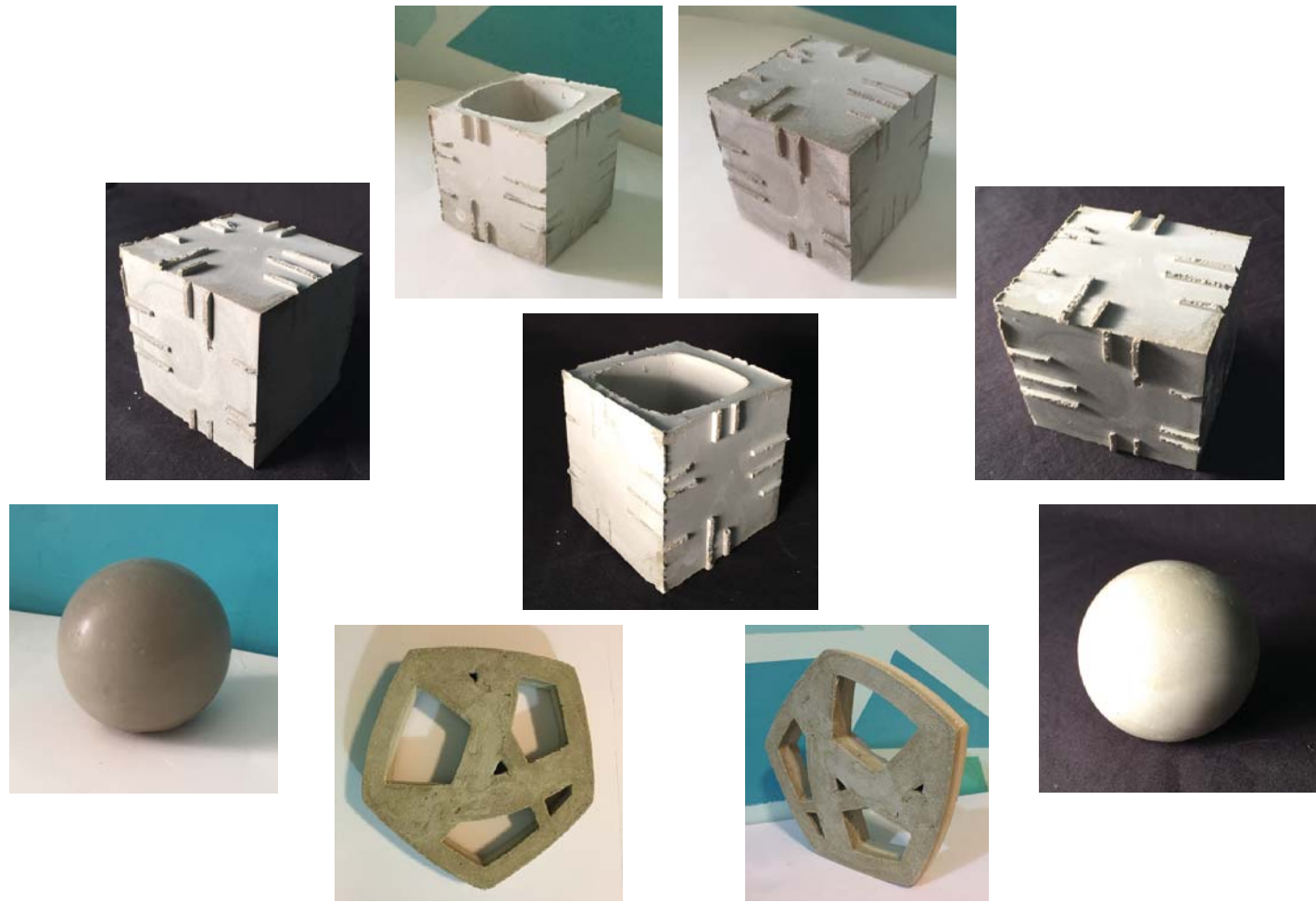


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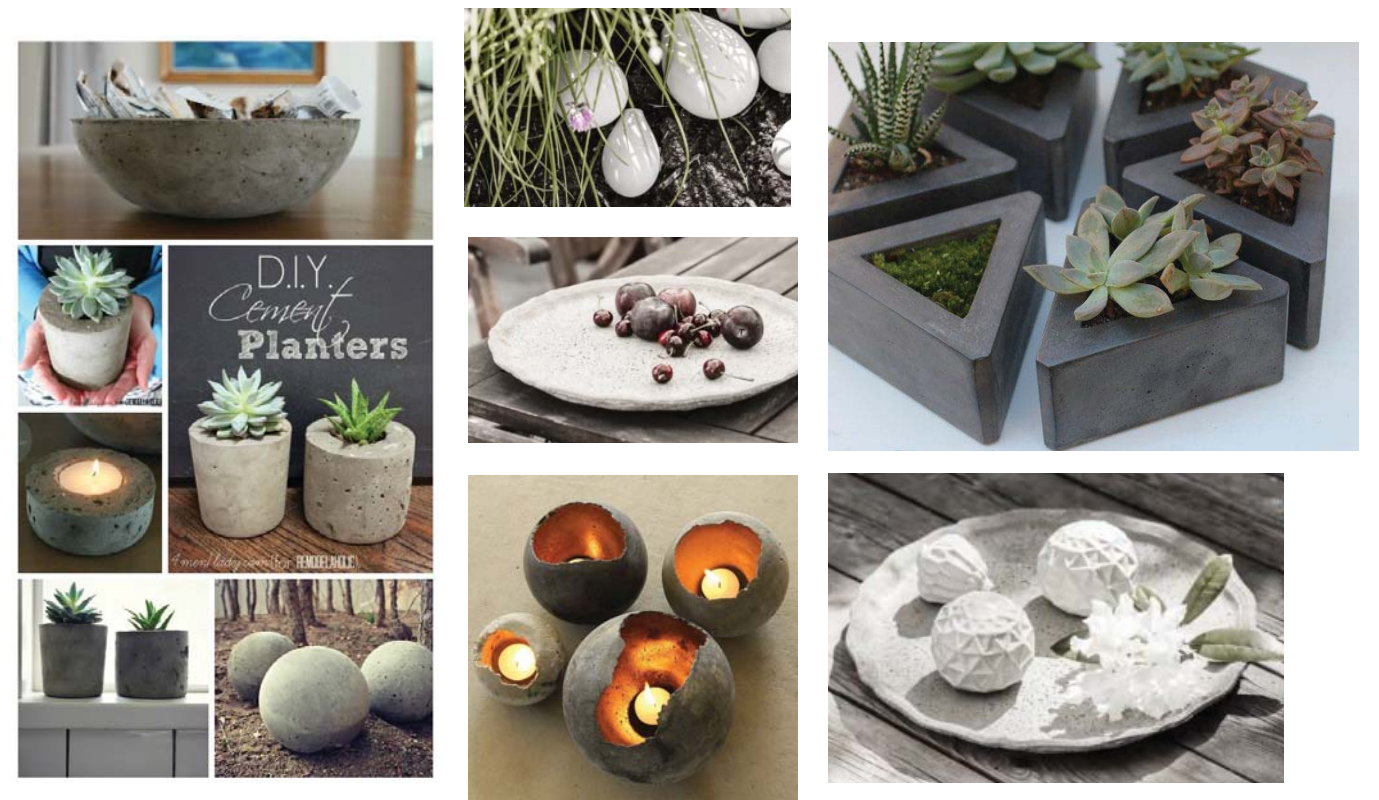
STEP 5: USE THE SCREW AND HUMMER TO BREAK THE GLASS



FINAL PRODUCT



IDEAS TO USE



STEP BY STEP:

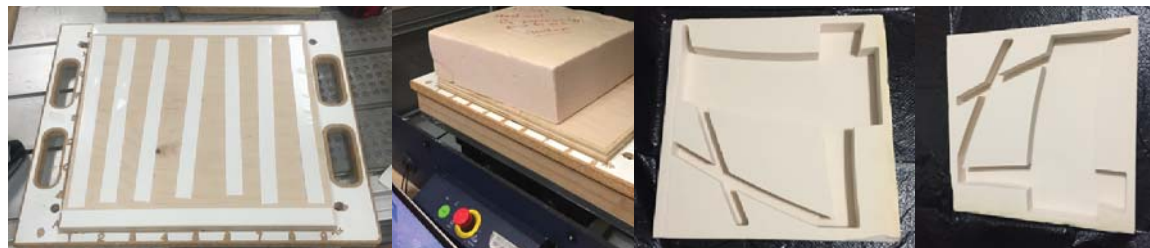
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4 PARTS CONCRETE + 2 PART WATER



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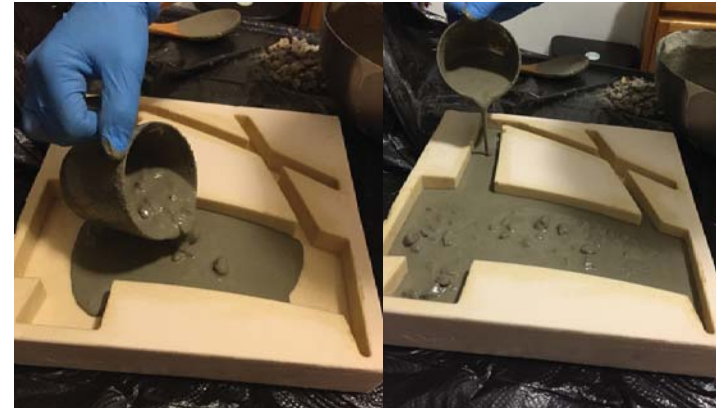


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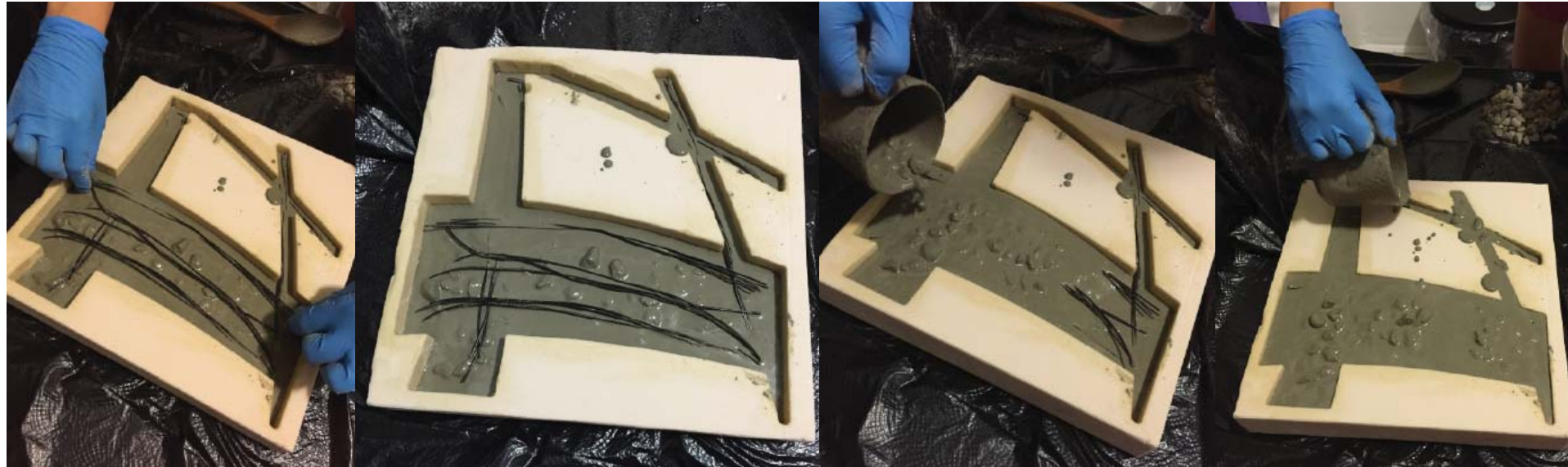
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STEP 6: REINFORCE CONCRETE

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PIECES ON METAL SHOULD MATCH THE LENGTH OF YOUR FORMWORK

PLACE METAL WIRES INTO FORMWORK AND POUR THE REST OF MIXED CONCRETE



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EDGE ALONG FORM EDGES TO DENSIFY AND COMPACT THE CONCRETE, WHICH MINIMIZES EDGE CHIPPING

USE METAL TROWEL TO CREATE A SMOOTH, HARD SURFACE

LEAVE IT TO SET FOR AT LEAST 6- 24 HOURS

