NET ZERO WATER
NOT A DRY TOPIC

Christopher Nielson AIA NCARB LEED AP

Bruner/Cott
architects and planners

Chris Chamberland PE LEED AP

The Berkshire Design Group, Inc.

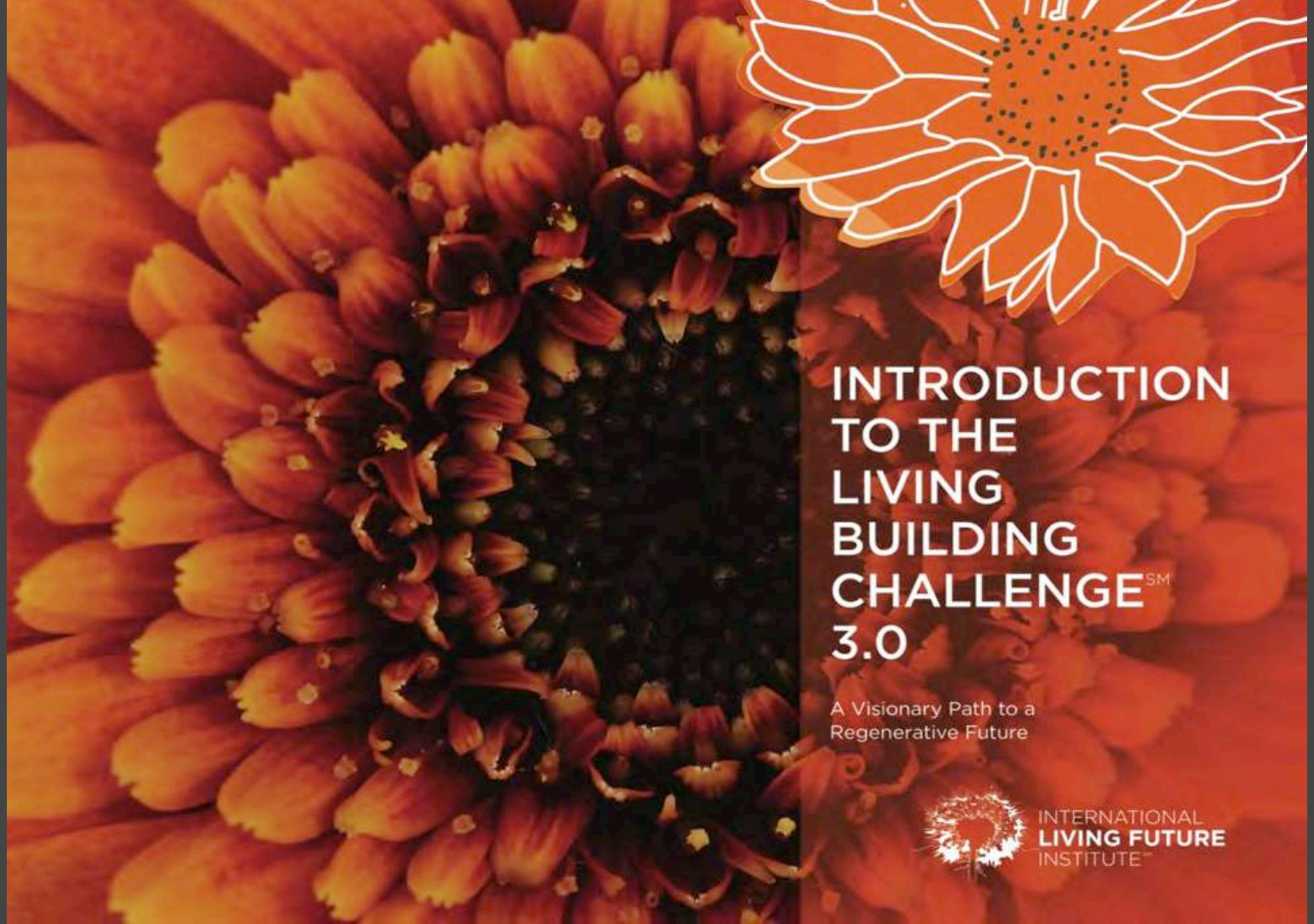
LEARNING OBJECTIVES

Introduce design strategies that explore a philosophy towards water usage and how our relationship with this precious resource is changing.

Identify specific net zero water technologies and systems for rain water catchment and filtration.

Explore onsite ground water management, grey water treatment, and human waste composting without connecting to the local sewer/storm water.

Discuss how active engagement with local and state regulatory agencies can create pathways towards water conservation and impact the future of building codes and DEP guidelines.

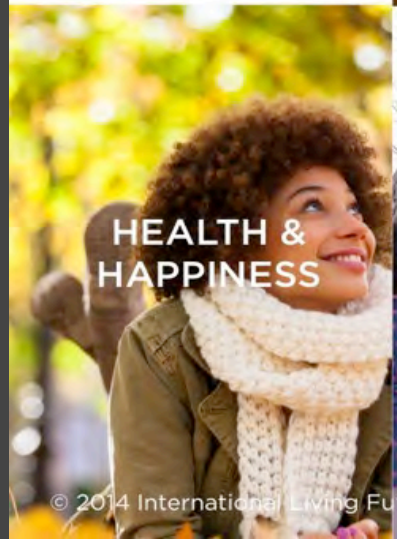


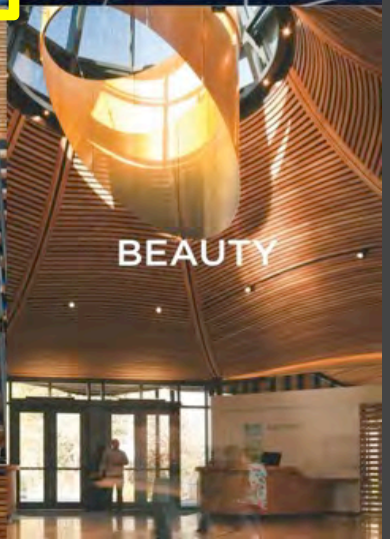
INTRODUCTION TO THE LIVING BUILDING CHALLENGE℠ 3.0

A Visionary Path to a Regenerative Future

INTERNATIONAL LIVING FUTURE INSTITUTE™

PETALS





IMPERATIVES

LIMITS TO GROWTH

URBAN AGRICULTURE

HABITAT EXCHANGE

HUMAN POWERED LIVING

NET POSITIVE WATER

NET POSITIVE ENERGY

CIVILIZED ENVIRONMENT

HEALTHY INTERIOR ENVIRONMENT

BIOPHILIC ENVIRONMENT

RED LIST

EMBODIED CARBON FOOTPRINT

RESPONSIBLE INDUSTRY

LIVING ECONOMY SOURCING

NET POSTIVE WASTE

HUMAN SCALE + HUMANE PLACES

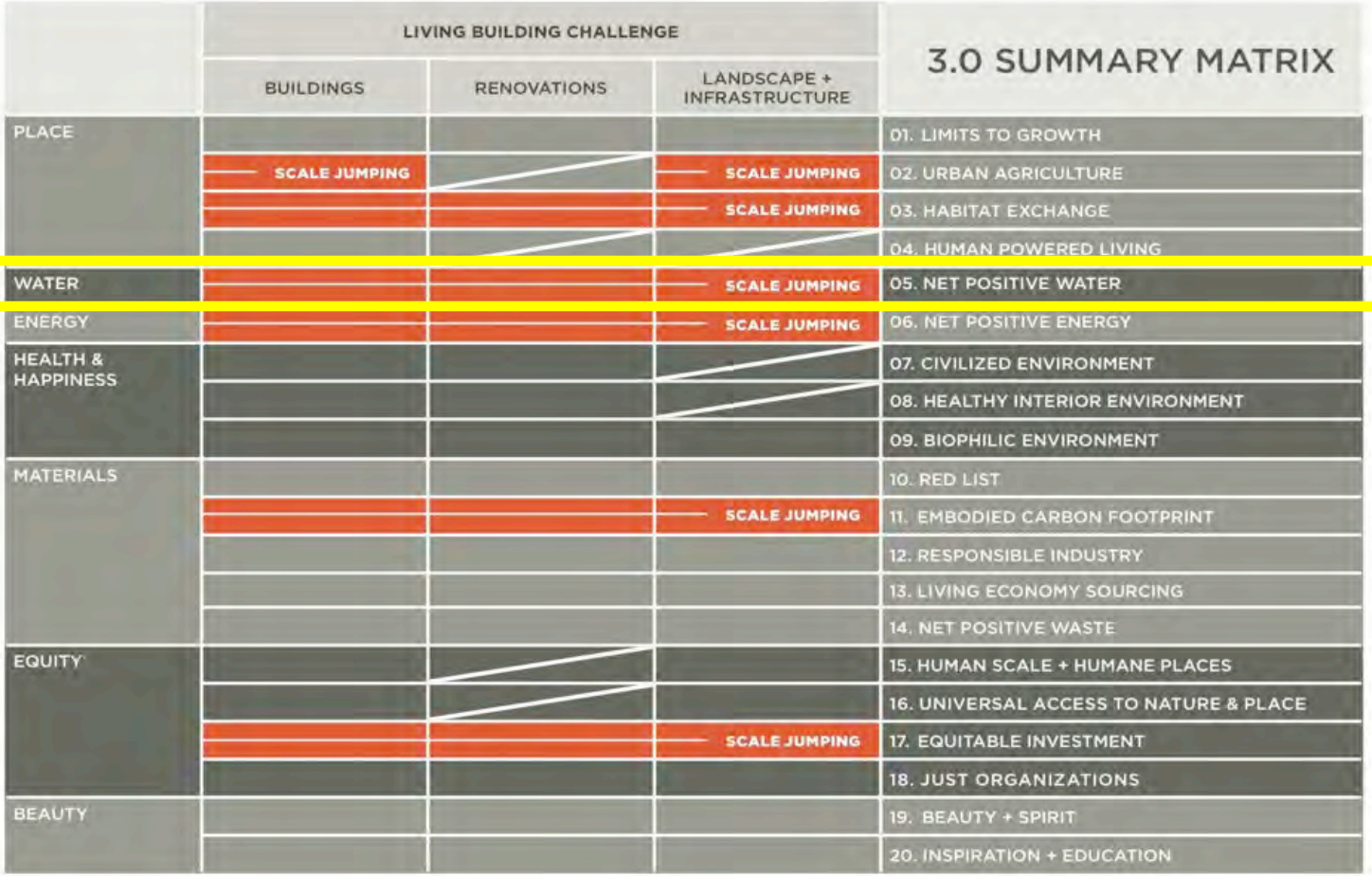
UNIVERSAL ACCESS TO NATURE + PLACE

EQUITABLE INVESTMENT

JUST ORGANIZAITONS

BEAUTY + SPIRIT

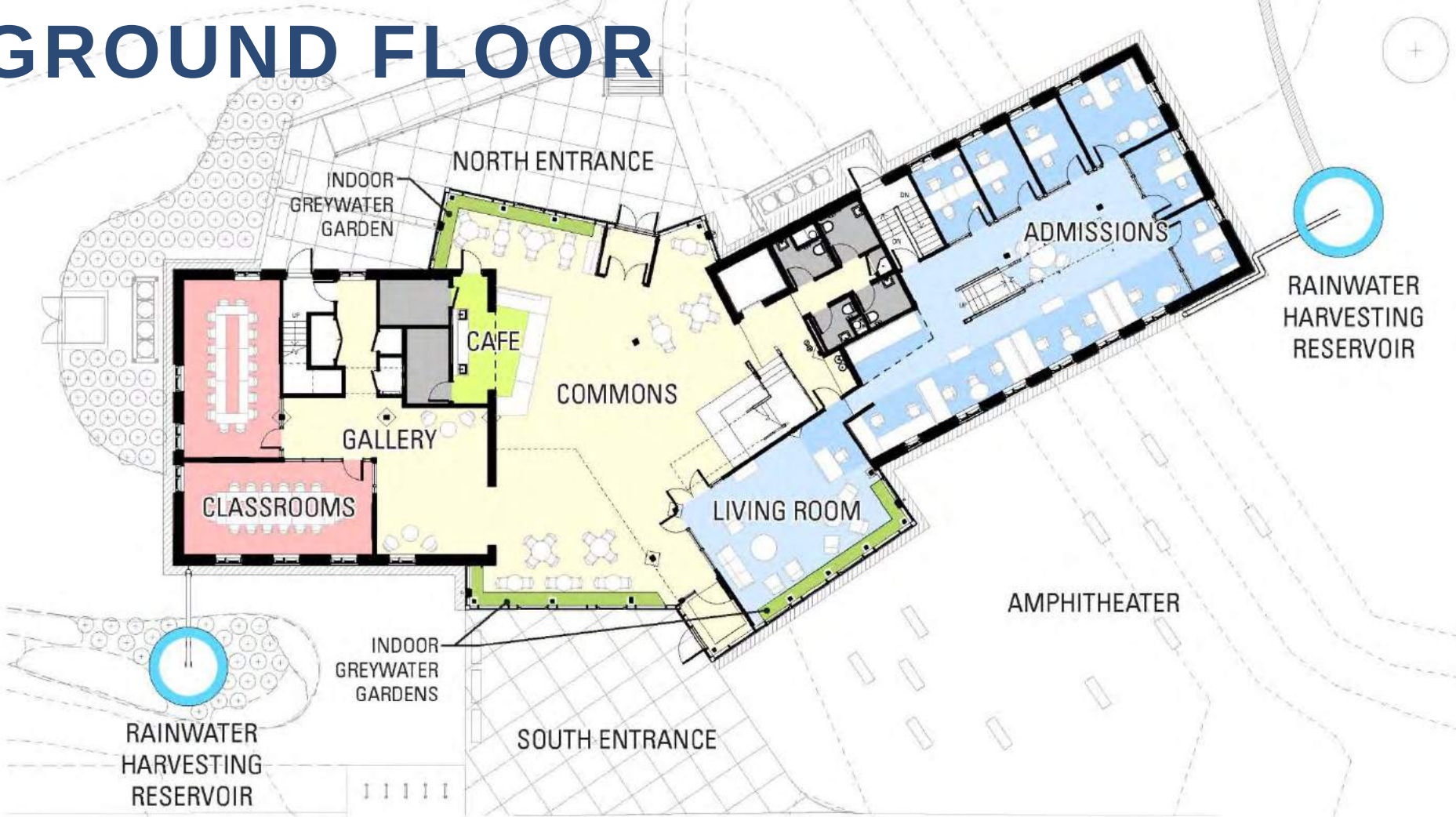
INSPIRATION + EDUCATION



WATER AND LANDSCAPE

Bruner/Cott
architects and planners

GROUND FLOOR



SECOND FLOOR

WATER CYCLE

DOMESTIC WATER

DRINKING WATER
IRRIGATION

GREYWATER

SINKS
DISHWASHING

STORMWATER

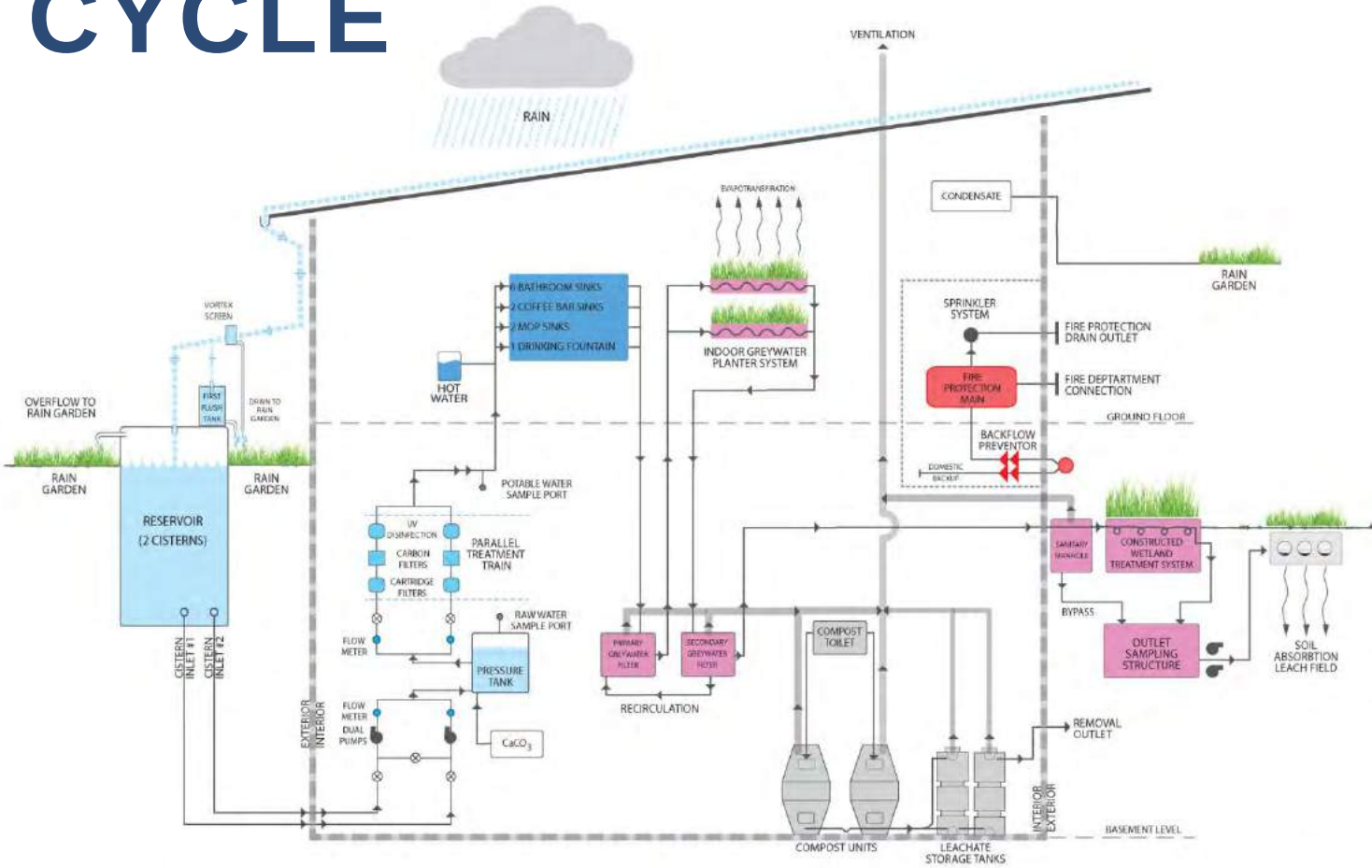
PERCIPITATION
RUN ON & OFF

BLACKWATER & WASTE

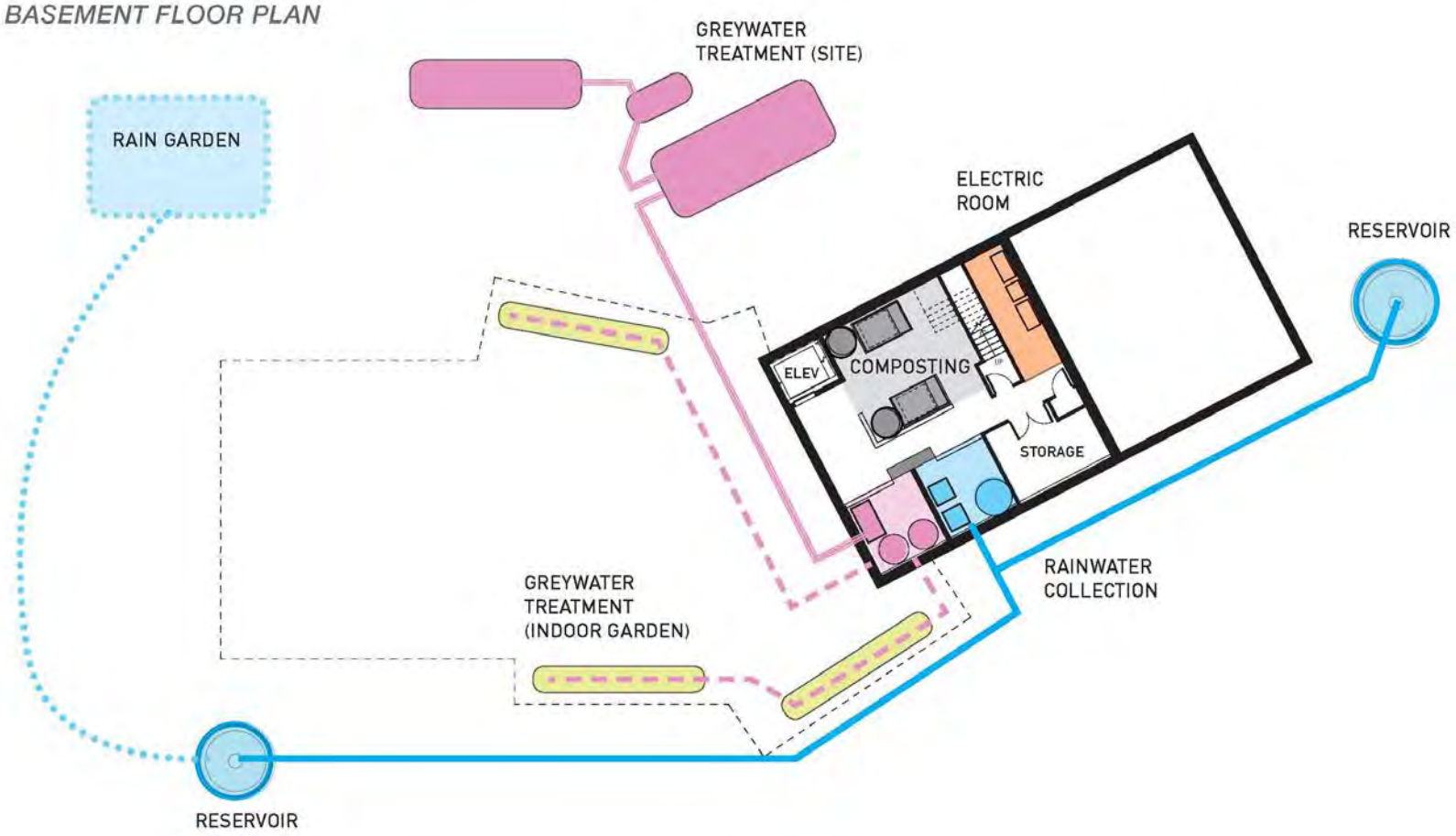
TOILETS

FIRE SURPRESSION

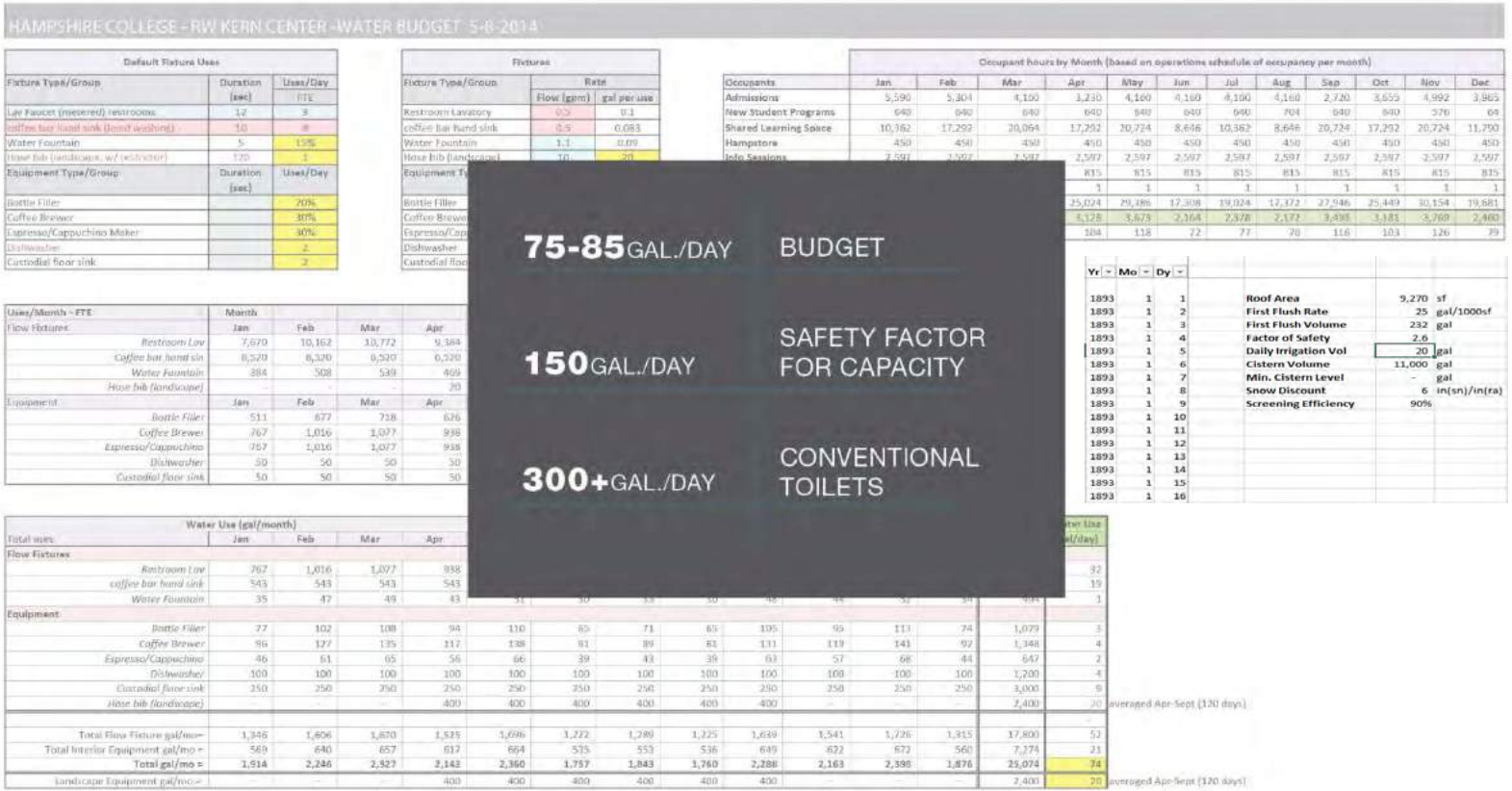
SPRINKLERS



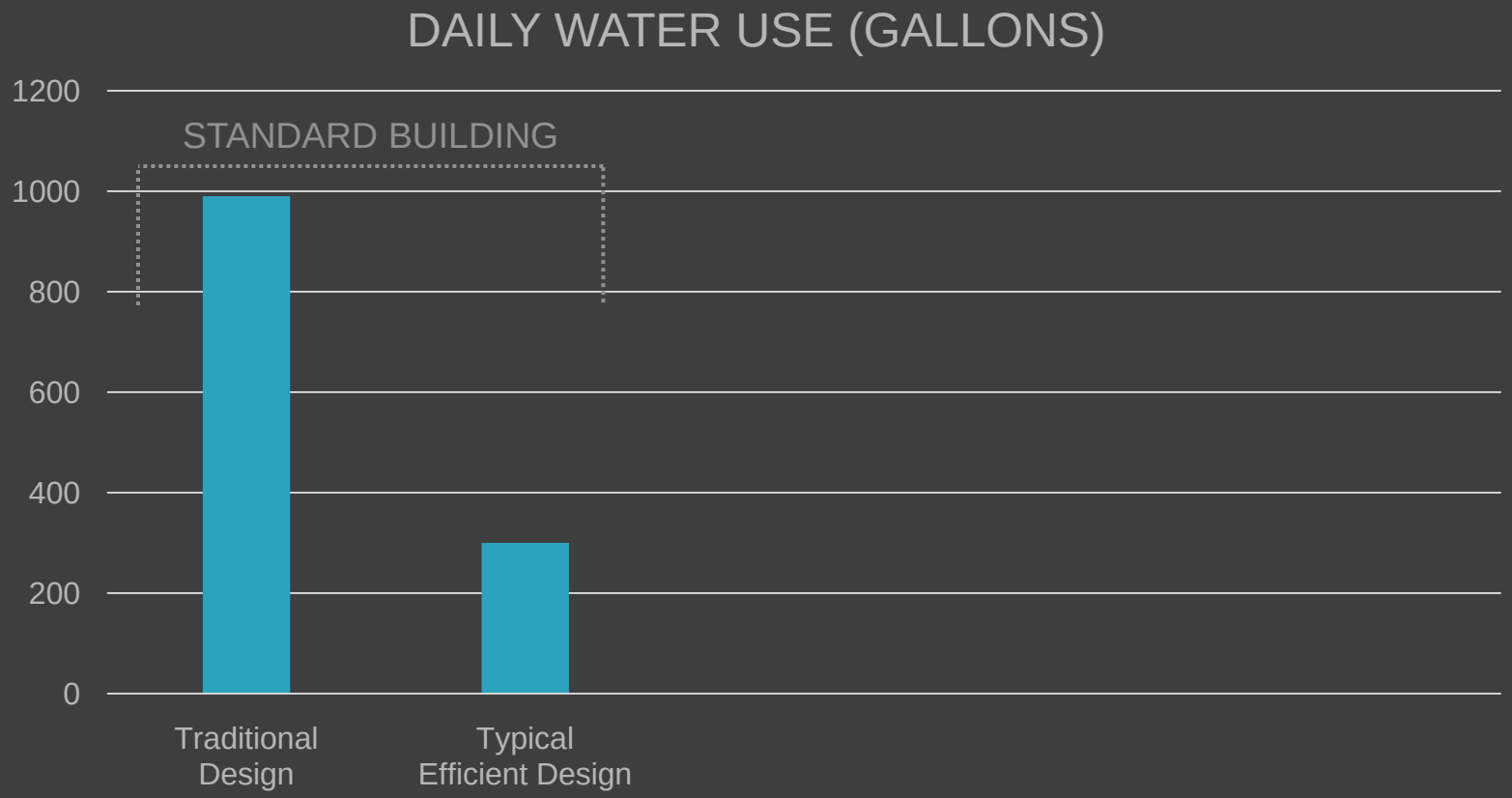
WATER CYCLE


BASEMENT FLOOR PLAN
GREYWATER
TREATMENT (SITE)
RAIN GARDEN
ELECTRIC
ROOM
RESERVOIR
ELEV
COMPOSTING
STORAGE
GREYWATER
TREATMENT
(INDOOR GARDEN)
RAINWATER
COLLECTION
RESERVOIR

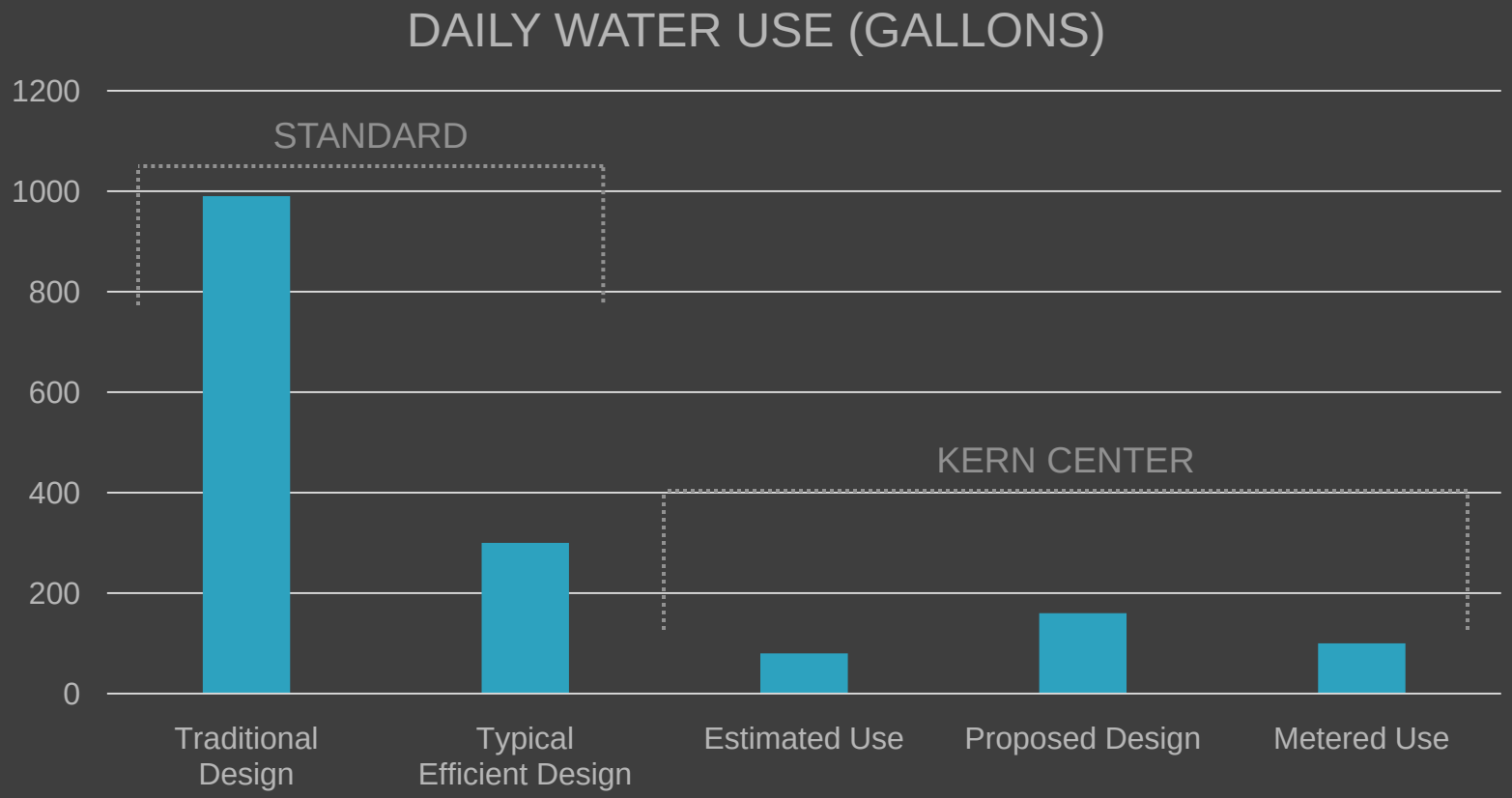
WATER BUDGET & MODELING



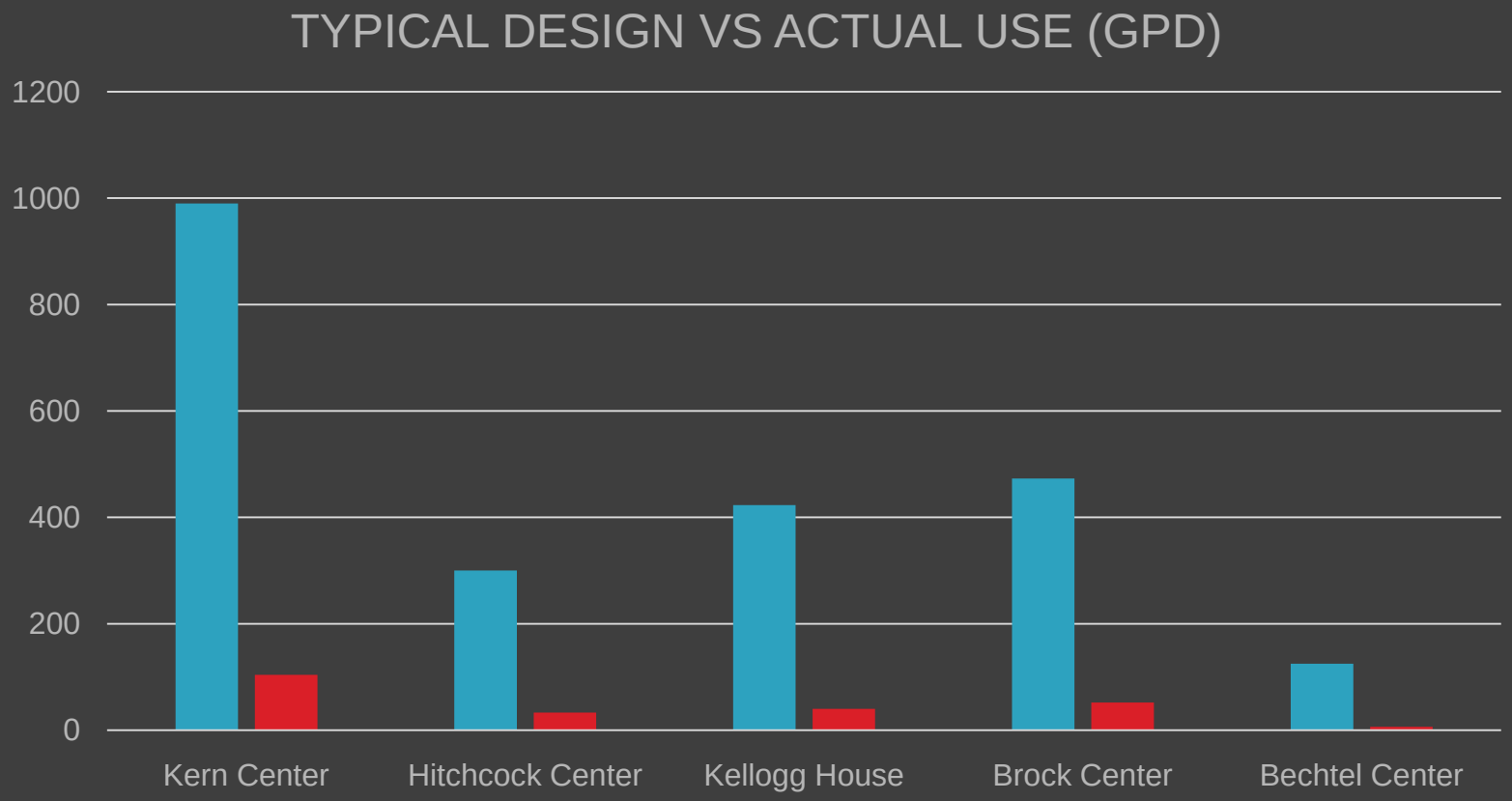
WATER BUDGET



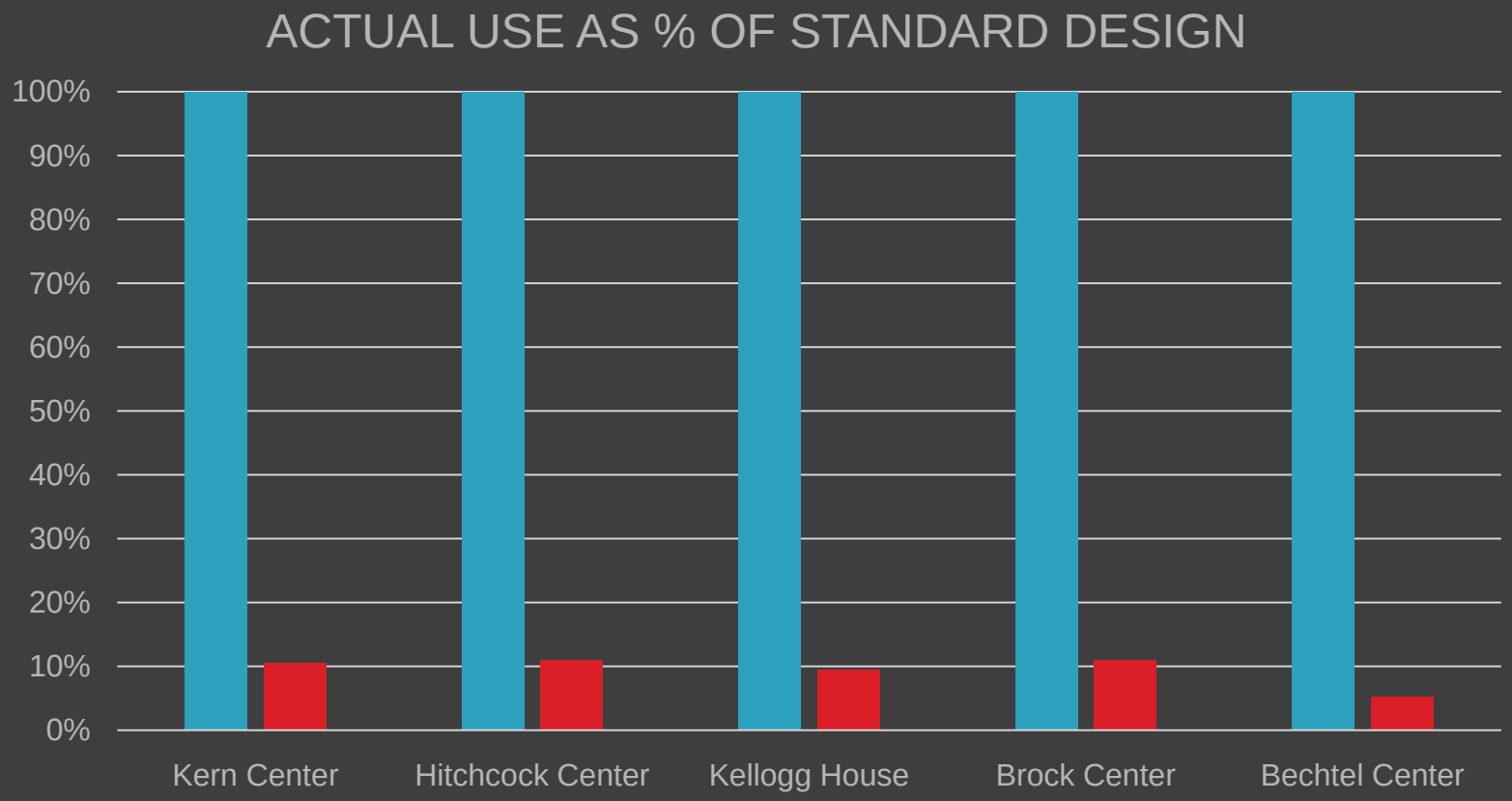
WATER BUDGET



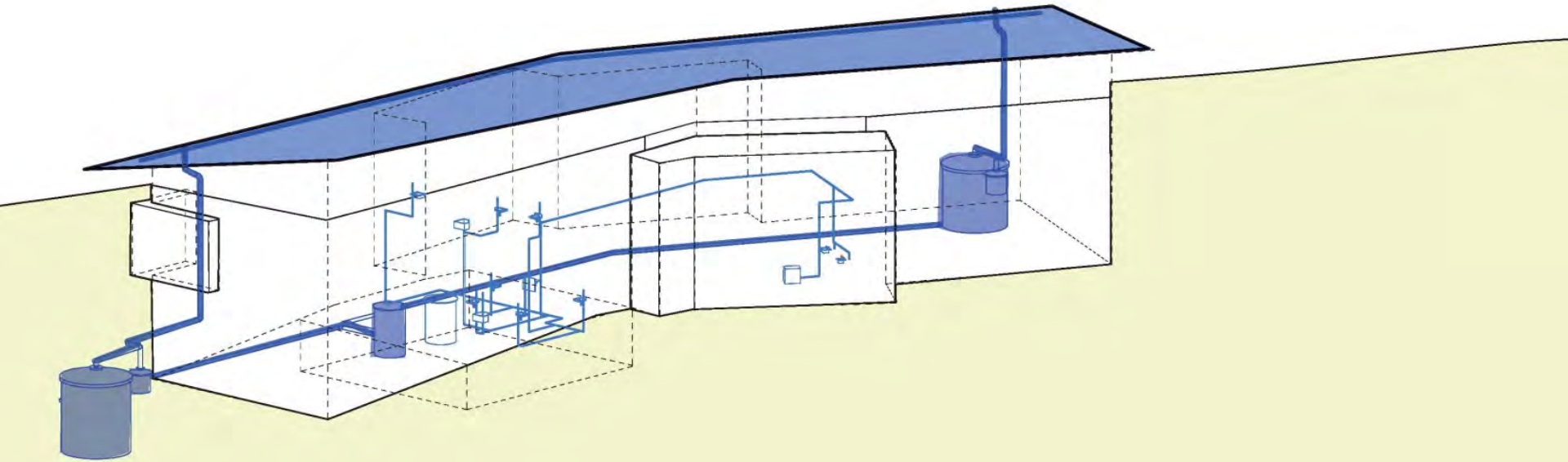
WATER BUDGET – LBC PROJECT



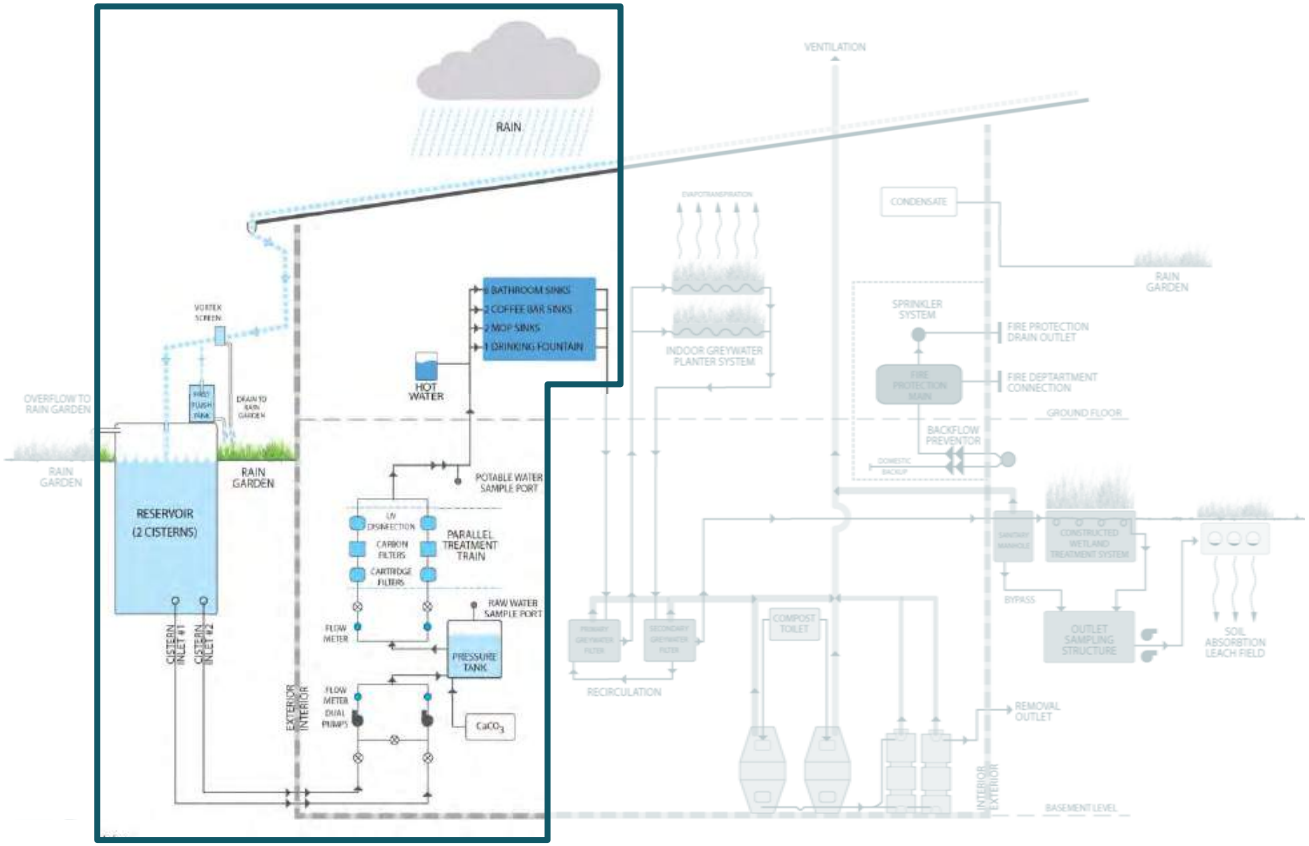
WATER BUDGET – LBC PROJECT



RAINWATER HARVEST

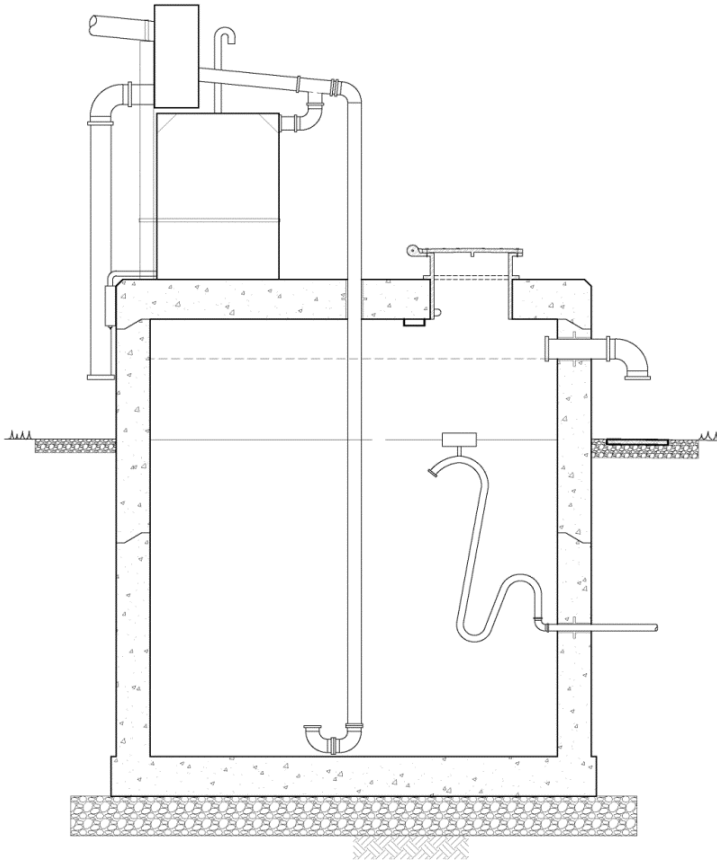


RAINWATER HARVEST



RAINWATER CAPTUR

- ROOF (WATERSHED AREA)
- DOWNSPOUTS
- DEBRIS SCREEN
- FIRST FLUSH



RAINWATER TREATMENT

LESSONS LEARNED

RAINWATER HAR

BY PREDECESSORS

- REGULATORY PATH BLAZED BY OTHERS
- BORROWED CONCEPTUAL DESIGN
- SEEING COMPONENTS IN REAL LIFE
- AVOIDED REJECTION OF UV REACTOR

LESSONS LEARNED

RAINWATER HAR

BY PREDECESSORS

- REGULATORY PATH BLAZED BY OTHER
- BORROWED CONCEPTUAL DESIGN
- SEEING COMPONENTS IN REAL LIFE
- AVOIDED REJECTION OF UV REACTOR

REGULATORY COMPLIANCE

- DRINKING WATER REGS – A HEIRARCHY
- OVERSIZED UV REACTOR

LESSONS LEARNED

RAINWATER HAR

BY PREDECESSORS

- REGULATORY PATH BLAZED BY OTH
- BORROWED CONCEPTUAL DESIGN
- SEEING COMPONENTS IN REAL LIFE
- AVOIDED REJECTION OF UV REACT

REGULATORY COMPLIANCE

- DRINKING WATER REGS – A HEIRAR
- OVERSIZED UV REACTOR
- TURBIDITY MONITOR REJECTED
  - HIGHER PERFORMING UNIT
  - DRINKING WATER CERTIFIED
    … IN EUROPE

ISO