

# Labor-Related Spaces and Furniture

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Part I: The Problem and Logic of Current Labor-Related Spaces  
and Furniture

Part II: The Labor Room Reimagined

Part III: Labor-Related Furniture Reimagined

Part IV: Advantages and Disadvantages

## Part I: The Problem and Logic of Current Labor-Related Spaces and Furniture

The spaces are almost exclusively doctor-centric and practical at the expense of the woman's experience—and to some degree, at the expense of her health.

# The Purpose of Common Items in the Labor Room

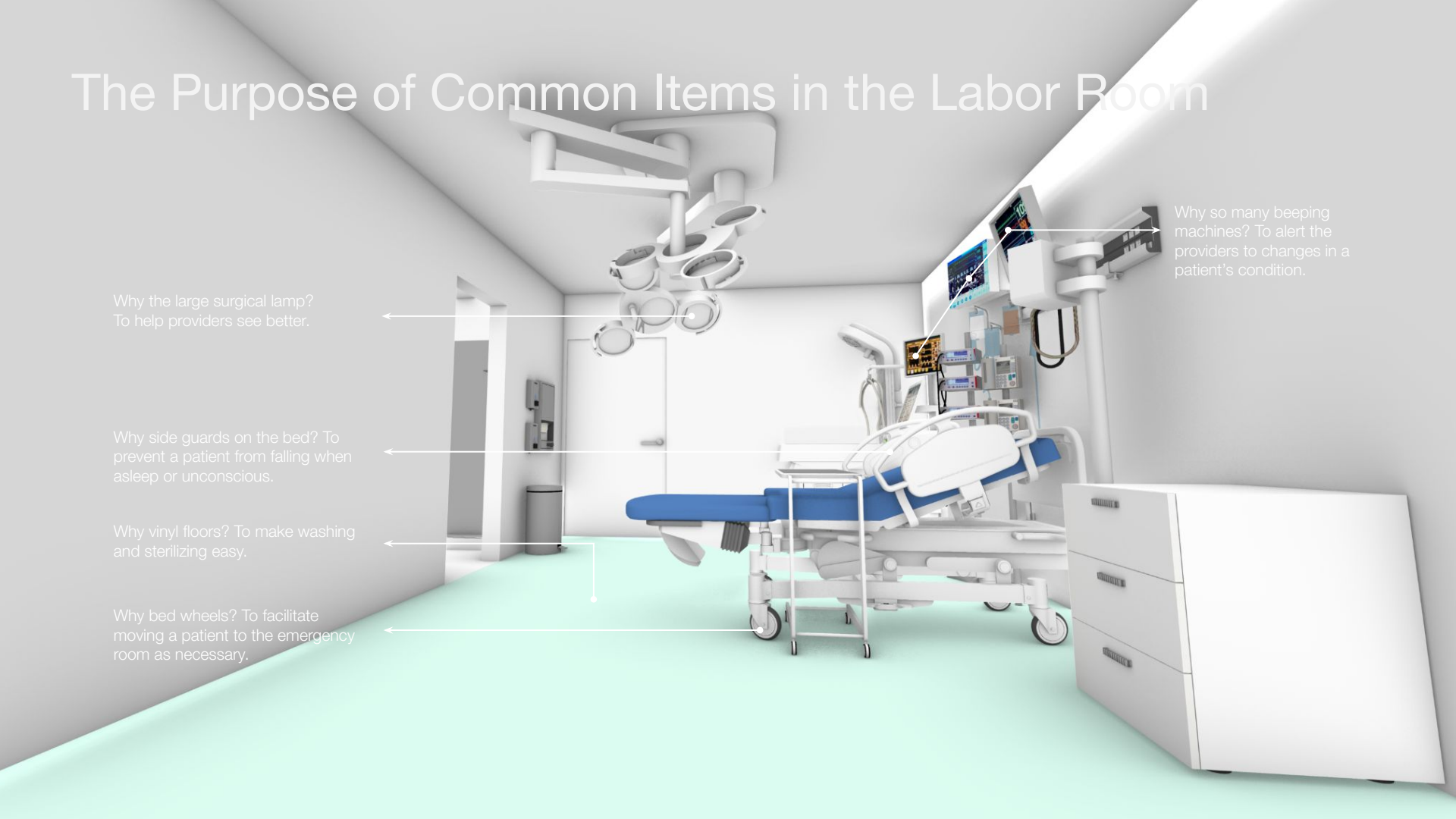
Why the large surgical lamp?  
To help providers see better.

Why side guards on the bed?  
To prevent a patient from falling when  
asleep or unconscious.

Why vinyl floors? To make washing  
and sterilizing easy.

Why bed wheels? To facilitate  
moving a patient to the emergency  
room as necessary.

Why so many beeping  
machines? To alert the  
providers to changes in a  
patient's condition.

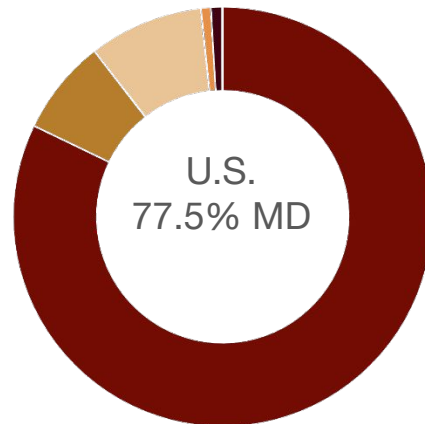
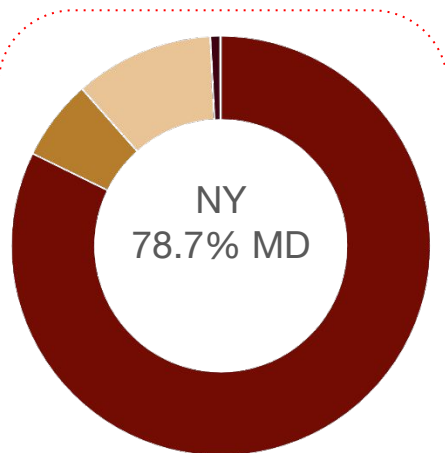
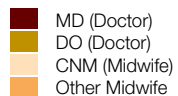




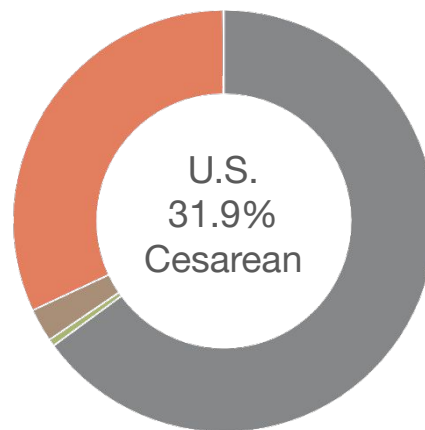
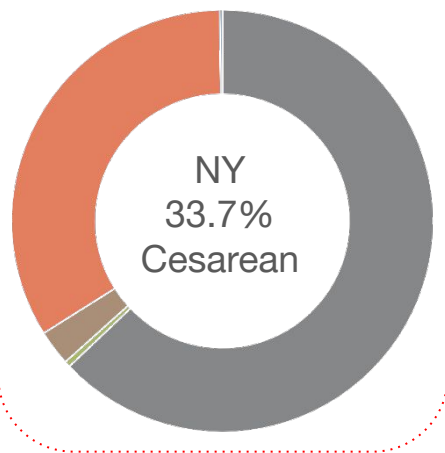
# Current Labor/Delivery Rooms



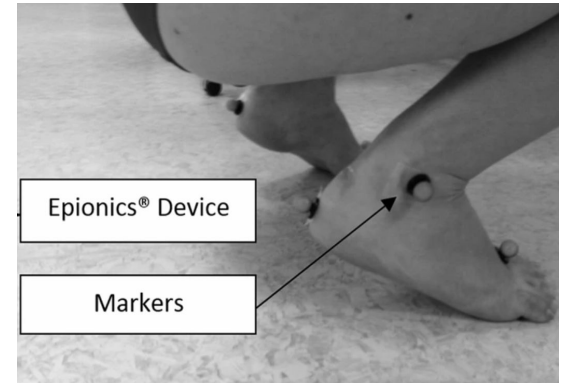
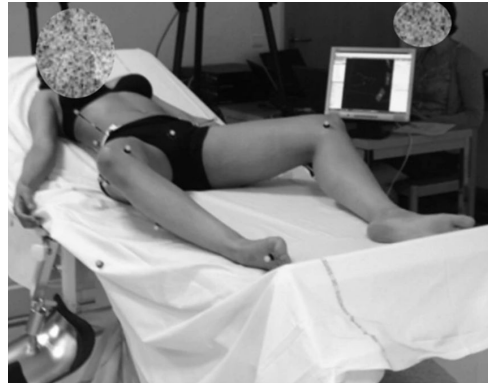
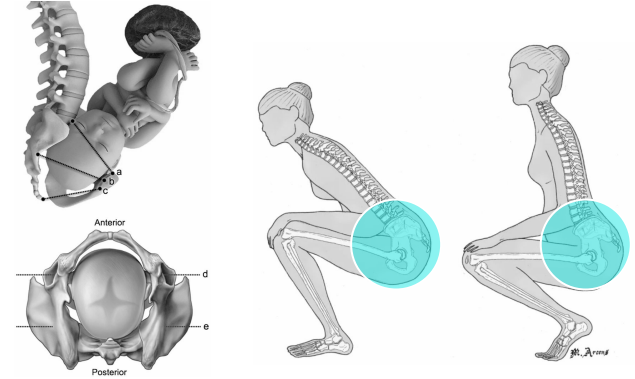
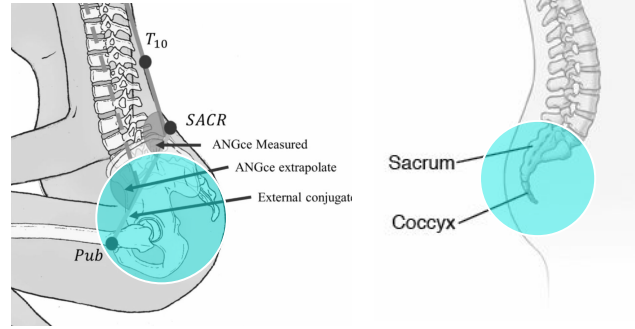
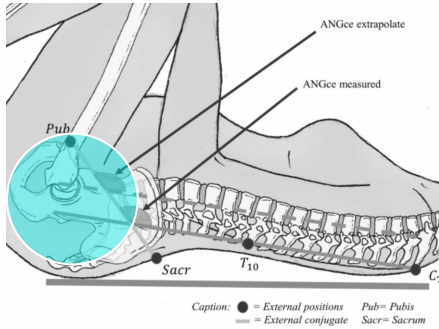
## Birth Attendance



## Final Route of Delivery



# Research on Women's Spine When Sitting and Lying on Back During Delivery



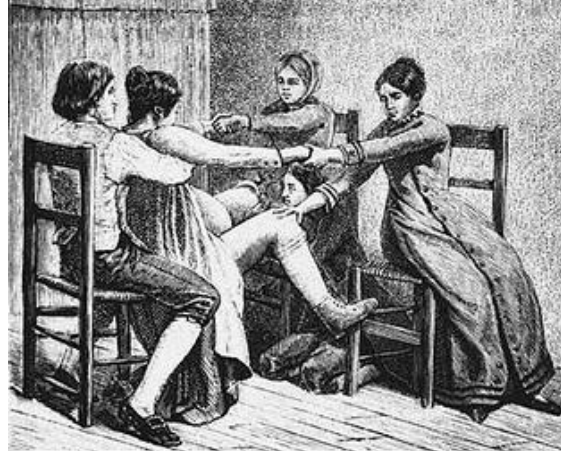
# Some Past Practices



1513



1580



1877



# The Waiting Area: Where the Journey Begins (and Sometimes Ends)





## Part II: The Labor Room Reimagined

Design is based on biophilic principles and user-customization



# Biophilia and User-Customization





# Biophilic Design

Light source. Pattern casts shadows and shapes from nature.

Natural wood texture

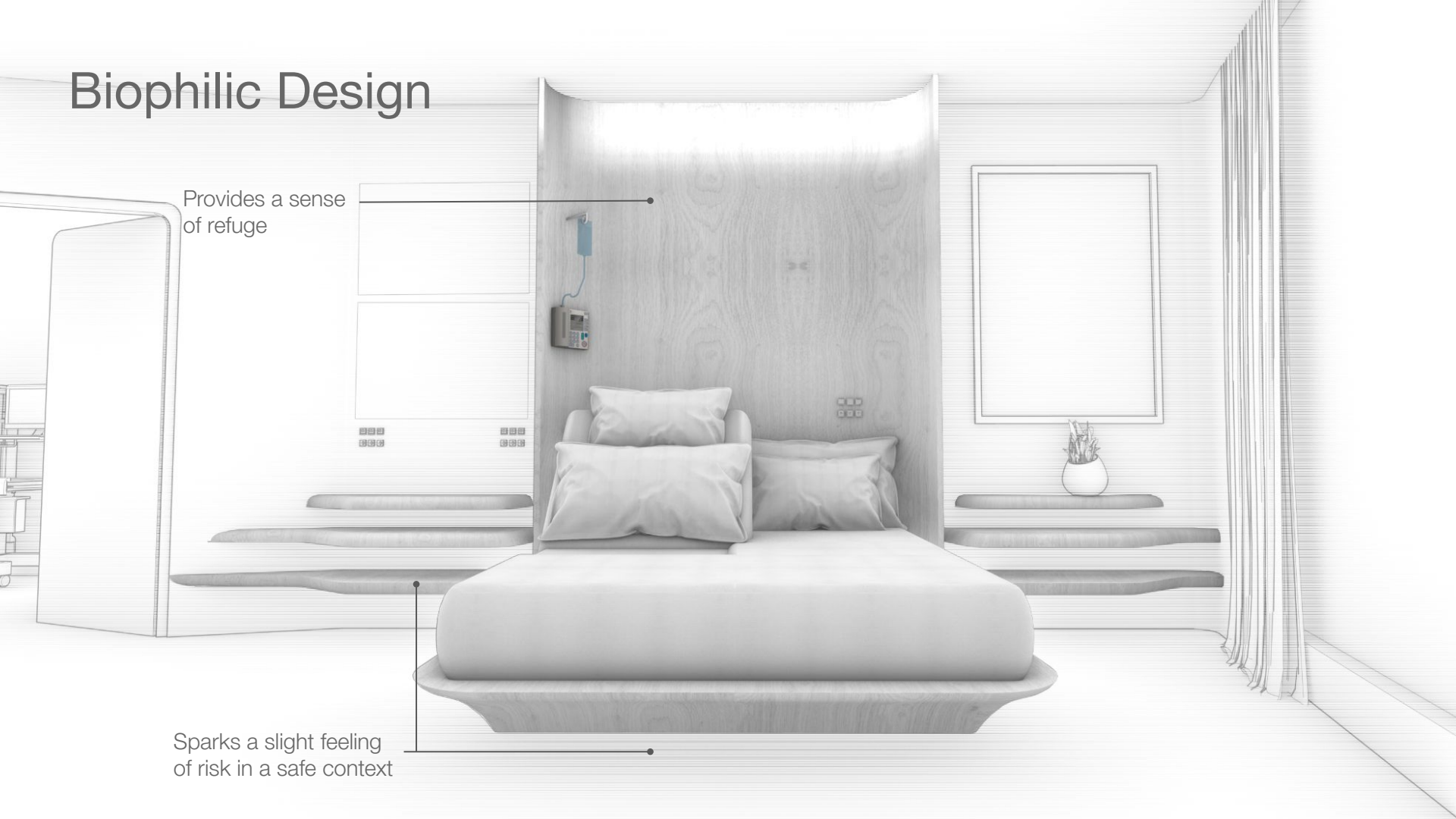
Nature image



# Biophilic Design

Provides a sense of refuge

Sparks a slight feeling of risk in a safe context



# Biophilic Design

Visual connection to nature

Nature analogue: fractal pattern

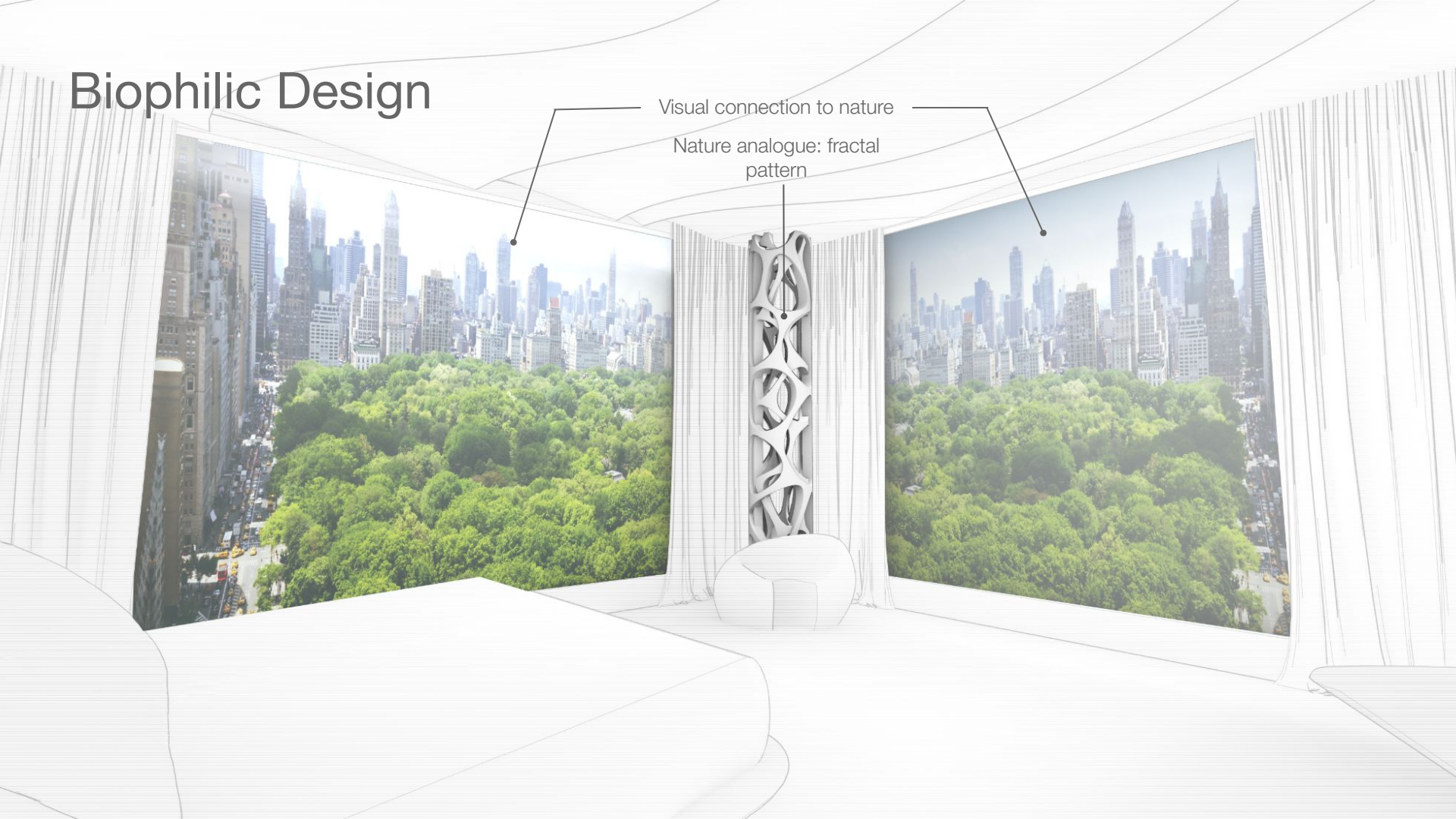




# Biophilic Design

Visual connection to nature

Nature analogue: fractal pattern

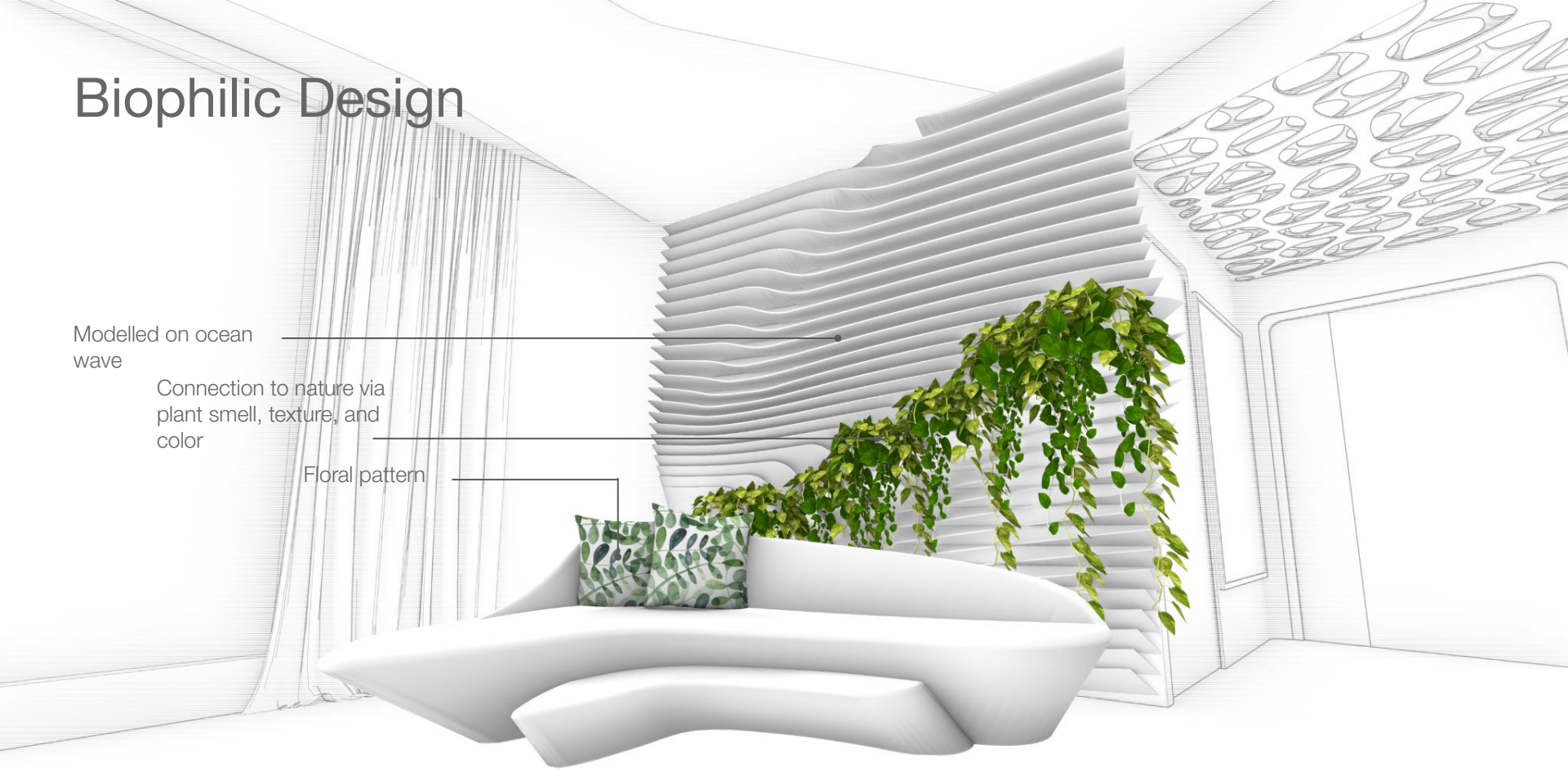


# Biophilic Design

Modelled on ocean  
wave

Connection to nature via  
plant smell, texture, and  
color

Floral pattern



# Biophilic Design

Nature texture: wood pattern  
(actual wood flooring or vinyl  
flooring with wood pattern )



# Biophilic Design



Nature pattern  
modelled on ocean

A line with a dot at the end points from the text to the wavy pattern of the wall.



# User-Customization and Functionality





# User-Customization and Functionality



# User-Customization and Functionality



# User-Customization and Functionality



# Further User-Customization via the Smart Room App

The Smart Labor Room App:

- controls lighting
- controls wall color
- connects to music library



















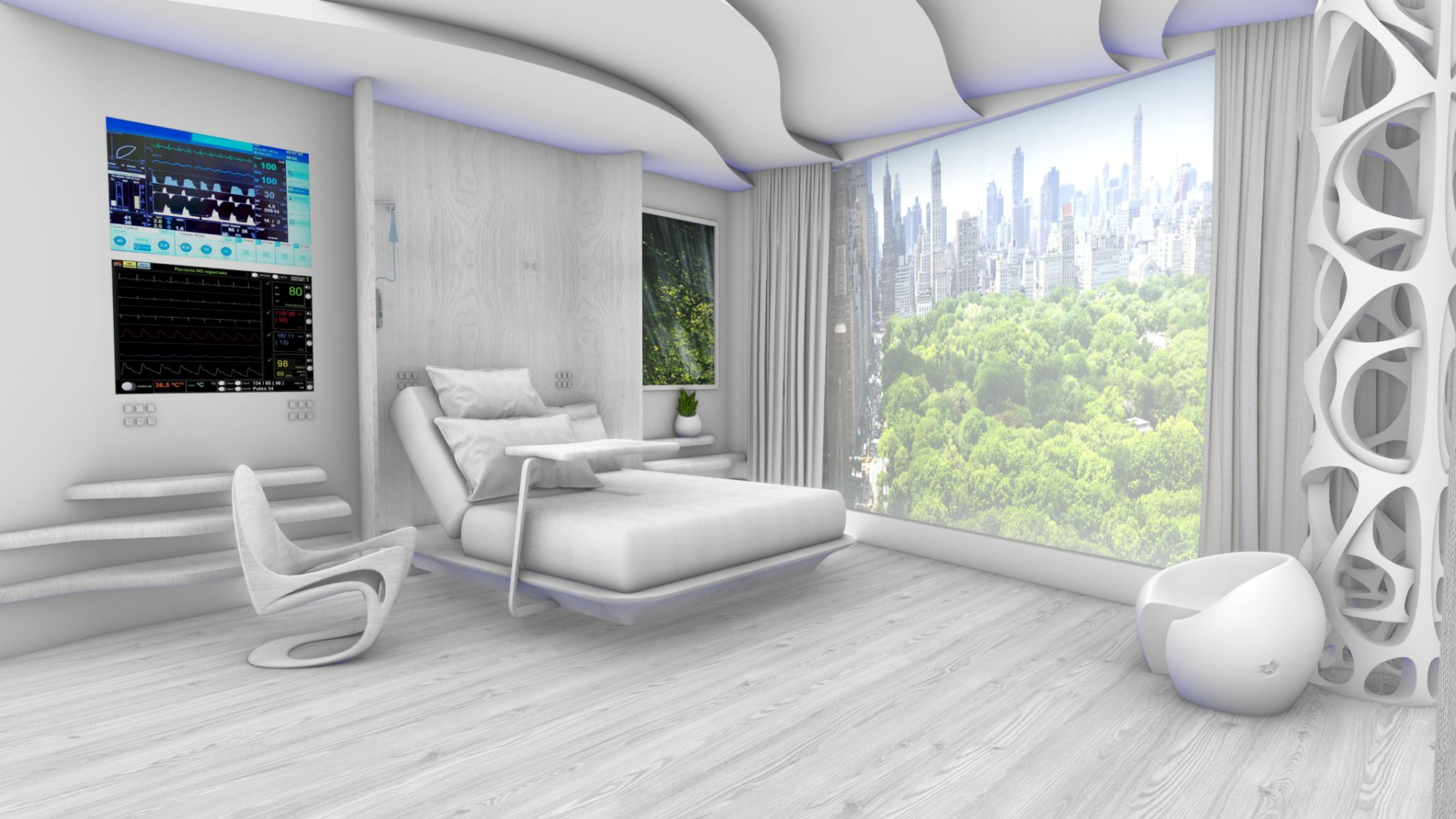




## Part III: Labor-Related Furniture Reimagined

In addition to being based on biophilic principles, the furniture is meant to better accommodate delivery positions and be user-friendly.





# Squatting Positions

## Pros

- Decreases need for certain delivery tools (e.g., forceps or vacuum)
- Helps with dilation

## Cons

- Baby's position may not be right for squatting



# Birthing Stool Positions

## Pros

- Can help baby move farther down
- Relieves stress on back
- Can increase dilation of cervix

## Cons

- Woman may experience increased blood loss





# Sitting Positions

## Pros

- Good for resting
- Can still be used with fetal monitoring machine

## Cons

- May not be an option if woman had high blood pressure during pregnancy





# Kneeling Positions

## Pros

- Relieves pain of contractions
- Eases back pressure

## Cons

- Difficult for continuous fetal monitoring



# Reclining Positions

## Pros

- Can release tension and relax muscles
- Great position if woman is tired but doesn't want to lie down completely

## Cons

- Working against gravity



# Side-Lying Positions

## Pros

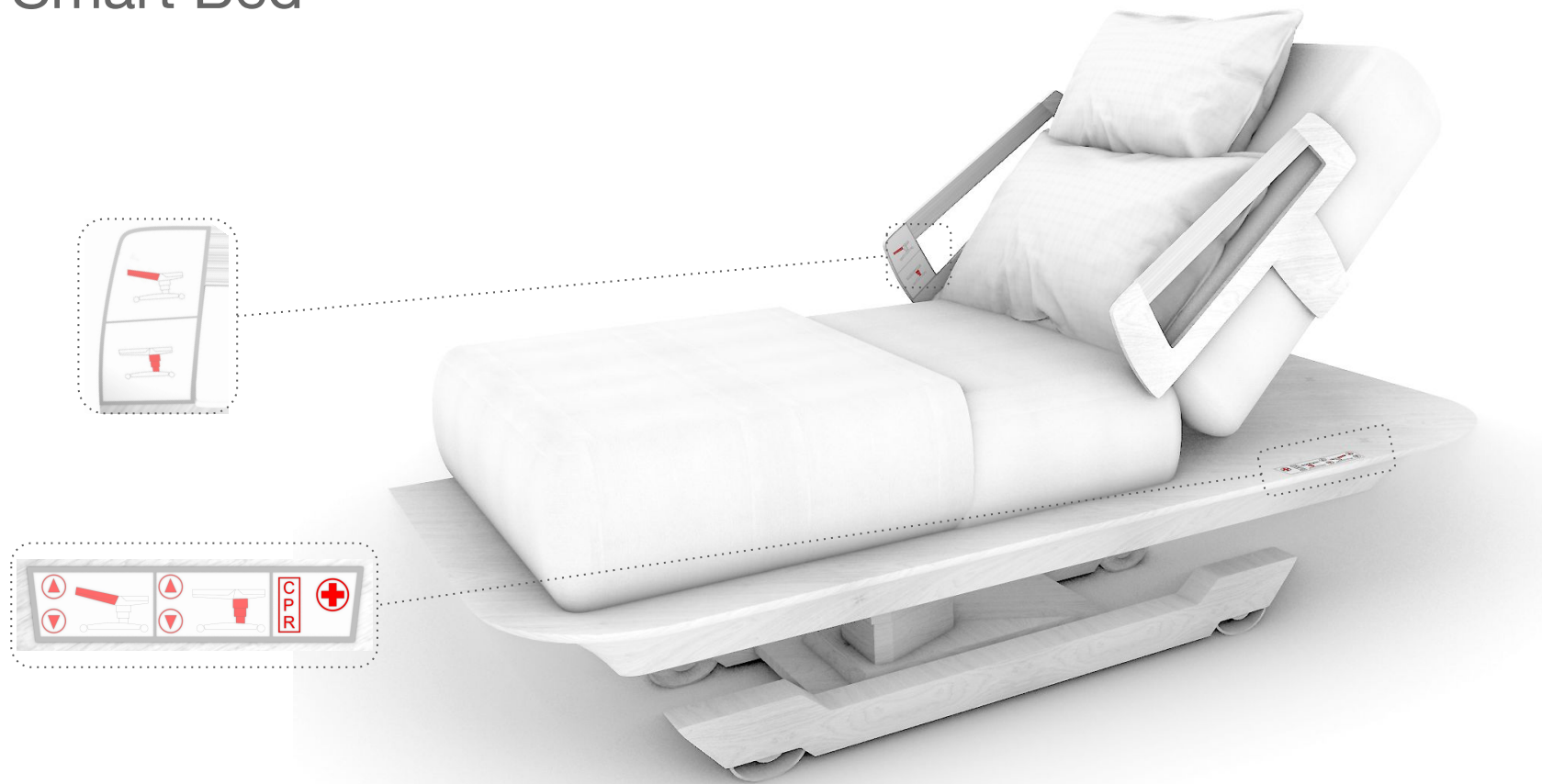
- Helps get oxygen to baby
- Can be used if woman has high blood pressure
- Makes it easier to relax during contractions

## Cons

- May be difficult to assess fetal heartbeat



# Smart Bed



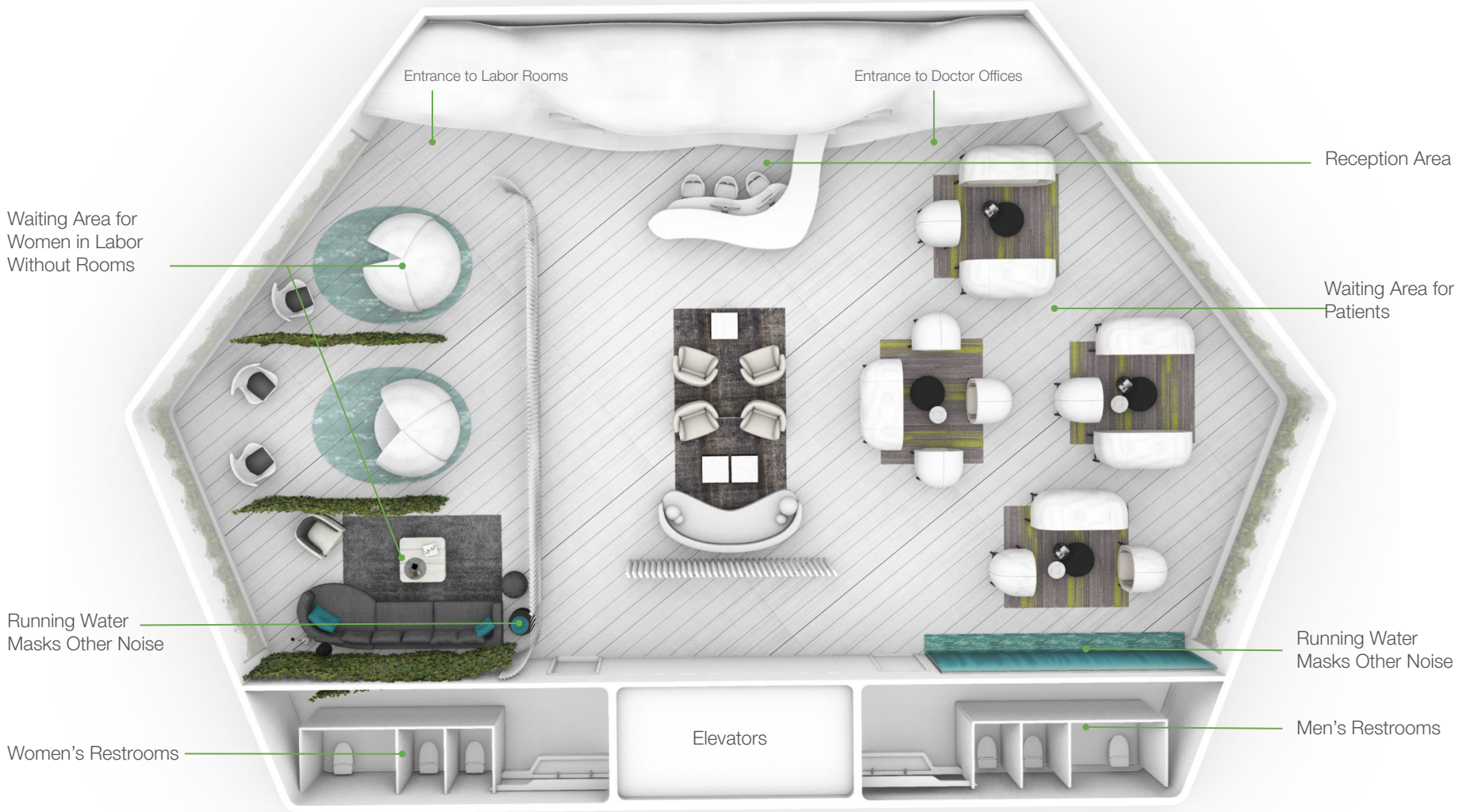


# Smart Bed



# Smart Bed App





























## Part IV: Advantages and Disadvantages

The room has been designed in a modular fashion to address cost concerns.



# Before and After—and Cost Concerns



# Furniture Modularity and Some Estimates

## Vertical-Garden Module

(vacuum acrylic modeling & painting)

1 unit: \$800+

6 units: \$2,400 (\$400 each)

## Window/Monitor

1 unit: \$500

## Perforated Ceiling

1 unit: \$150

6 units: \$420 (\$70 each)

## Headboard Panels

1 unit: \$800

6 units: \$3,000 (\$500 each)

(Source: Unruth)

## Overbed Table

1 unit: \$150

6 units: \$420 (\$70 each)

(Source: Eva Medical)

## Bed Frame

1 unit: \$1,500

6 units: \$4,800 (\$800 each)

(Source: MedPlus)

## Mattress

1 unit: \$1,000

6 units: \$3,600 (\$600 each)

(Source: Sleep Number 360 from Sleep Number)

## Nightstand

1 unit: \$150

6 units: \$420 (\$70 each)

## Flooring (Wood)

\$0.53 per sq. ft.

## Birthing Chair

1 unit: \$500

6 units: \$1,800 (\$300 each)

(Source: Unruth)

## The Vertical Support

1 unit: \$800

6 units: \$3,000 (\$500 each)

(Source: Unruth)















