The EC3 tool is about more
than quantifying embodied carbon...

Perkins&Will

It's changing the way we work with our design teams.

Perkins&Will

Perkins and Will and Webcor are using the Newark Civic Center in Newark, CA as a case study to pilot the EC3 Tool. We are also working with Sellen to test the EC3 Tool on The Hub, an office campus Mountlake Terrace, WA.

Piloting the EC3 tool in California & Washington

Informing our decisions about supply chain.

We're comparing methods to gather takeoffs for the EC3 Tool & collaborating to establish a process for low-carbon materials procurement.

Some options for inputting takeoffs:

BIM 360 direct import:

- EC02e at a glance

Tally analysis + import:

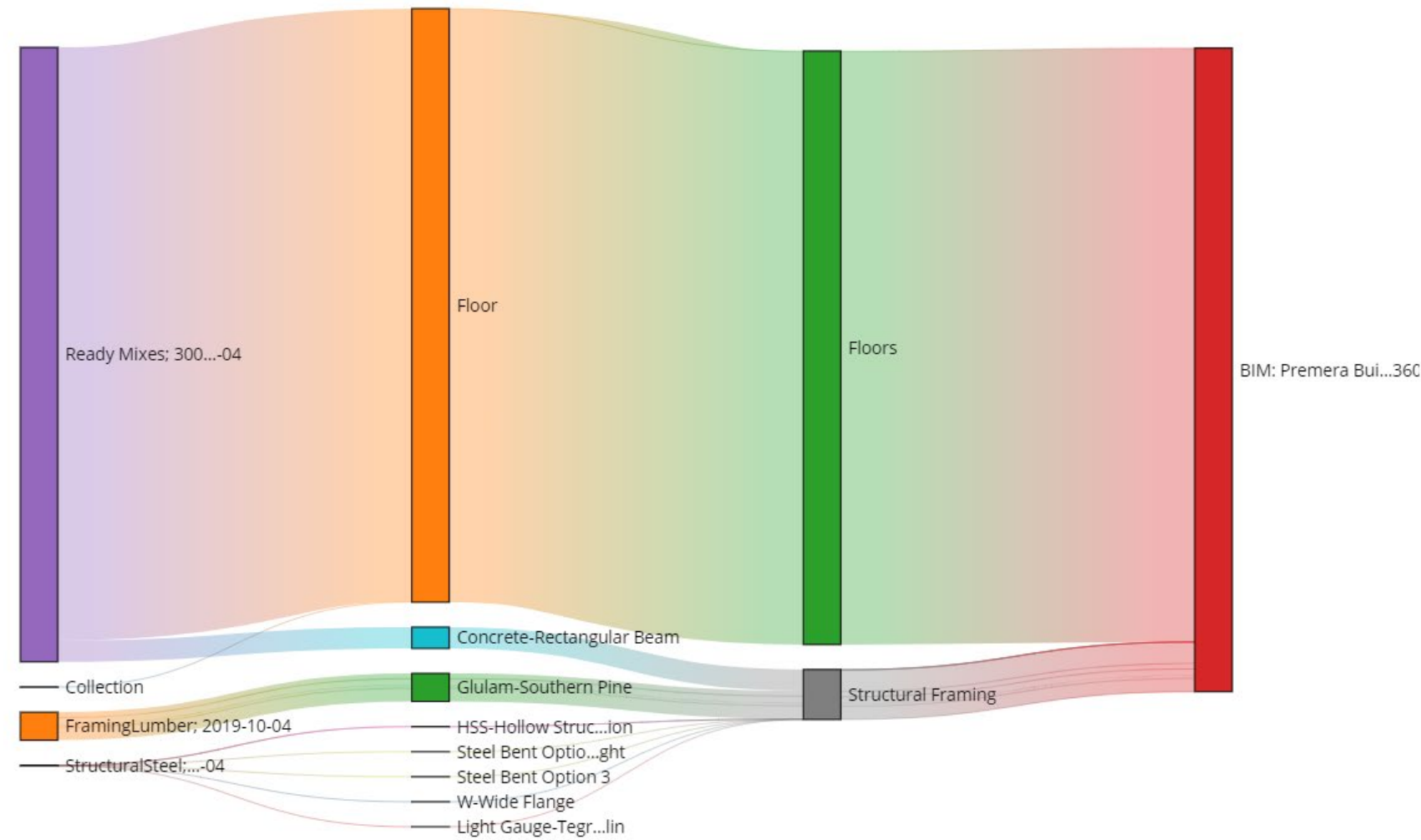- LCA + embodied carbon procurement

Direct input from takeoffs

- Recommended best practice

→

The Hub.

Takeoffs:
Import from
BIM 360

Ready Mixes; 300...-04

Floor

Floors

BIM: Premera Bui...360

Concrete-Rectangular Beam

Collection

Glulam-Southern Pine

FramingLumber; 2019-10-04

HSS-Hollow Struc...ion

StructuralSteel;...-04

Steel Bent Optio...ght

Steel Bent Option 3

W-Wide Flange

Light Gauge-Tegr...lin

Structural Framing

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Takeoffs:
Import from
Tally Analysis

Reducing Embodied Carbon

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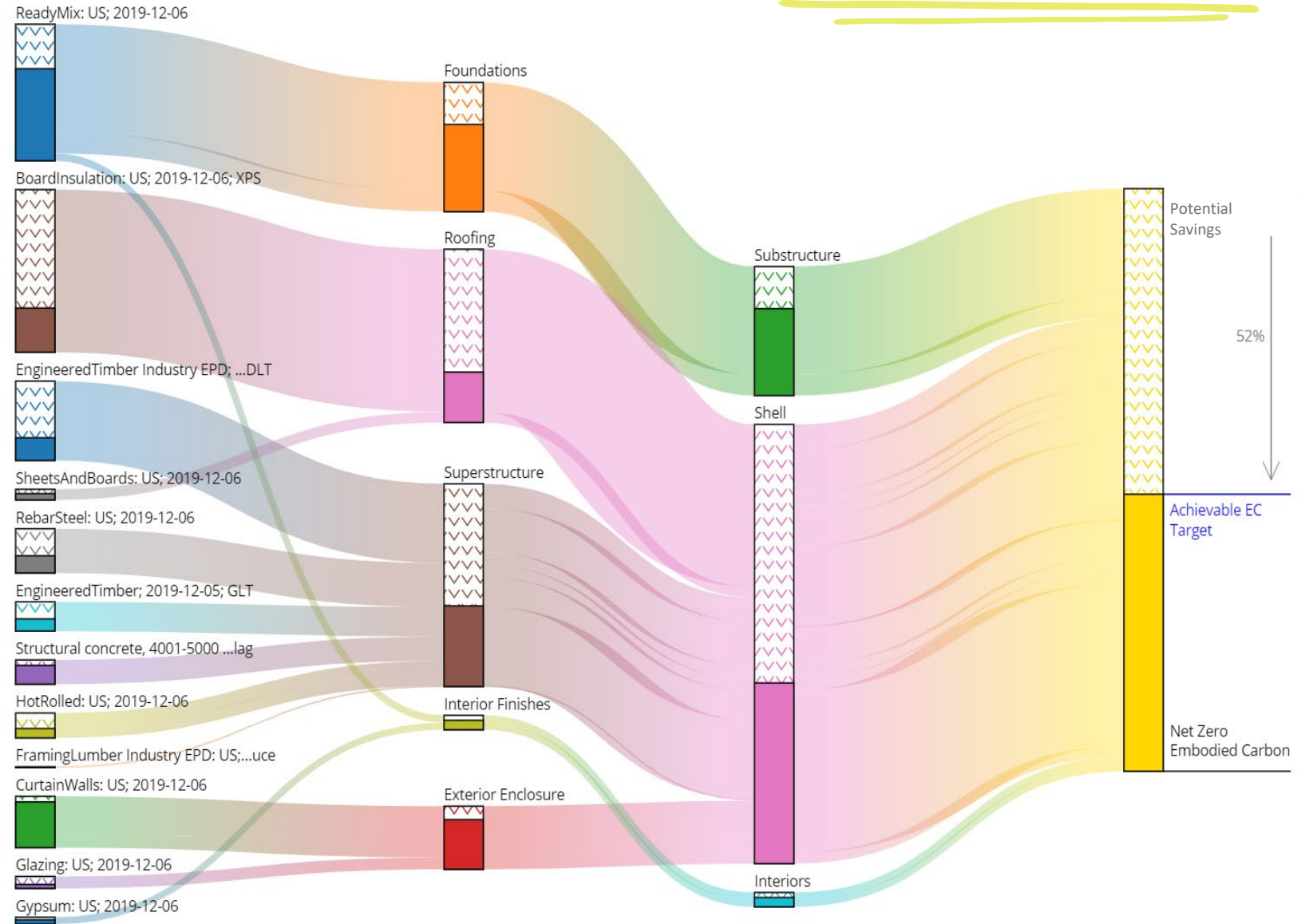
Reducing Embodied Carbon

Concrete Mix Refinement:

Collaborate with
contractor, subs
& local plants to optimize mixes
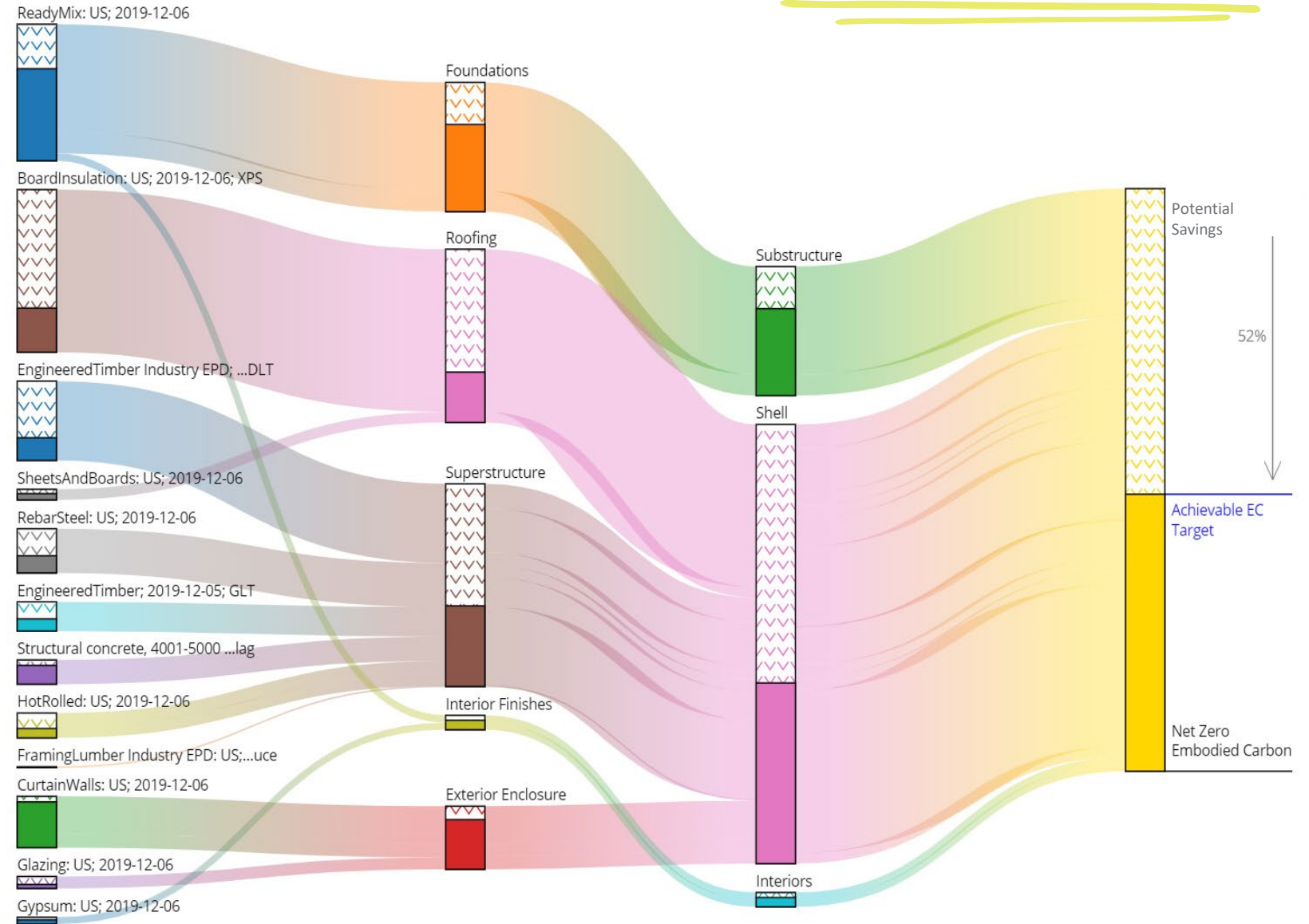
Alternative & recycled options:

Use EC3 to find lower carbon products,
compile info from spec.
writers, designers, & researchers

The timber industry:

Procure certified lumber, reach out to
local mills to request
EPD's, & perform Life Cycle Assessment
for impact comparison

Market transformation

Select materials with Environmental Product
Declarations; contact manufacturers to
request
increased transparency and
share-back procurement success stories

ReadyMix: US; 2019-12-06

BoardInsulation: US; 2019-12-06; XPS

EngineeredTimber Industry EPD; ...DLT

SheetsAndBoards: US; 2019-12-06

RebarSteel: US; 2019-12-06

EngineeredTimber; 2019-12-05; GLT

Structural concrete, 4001-5000 ...lag

HotRolled: US; 2019-12-06

FramingLumber Industry EPD: US;...uce

CurtainWalls: US; 2019-12-06

Glazing: US; 2019-12-06

Gypsum: US; 2019-12-06

Foundations

Roofing

Superstructure

Interior Finishes

Exterior Enclosure

Substructure

Shell

Interiors

Potential Savings

52%

Achievable EC Target

Net Zero Embodied Carbon

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Informing our decisions about material selection.

We're using these takeoffs to better understand the embodied carbon content of our projects' materials and assessing how the EC3 Tool can influence design on future projects.

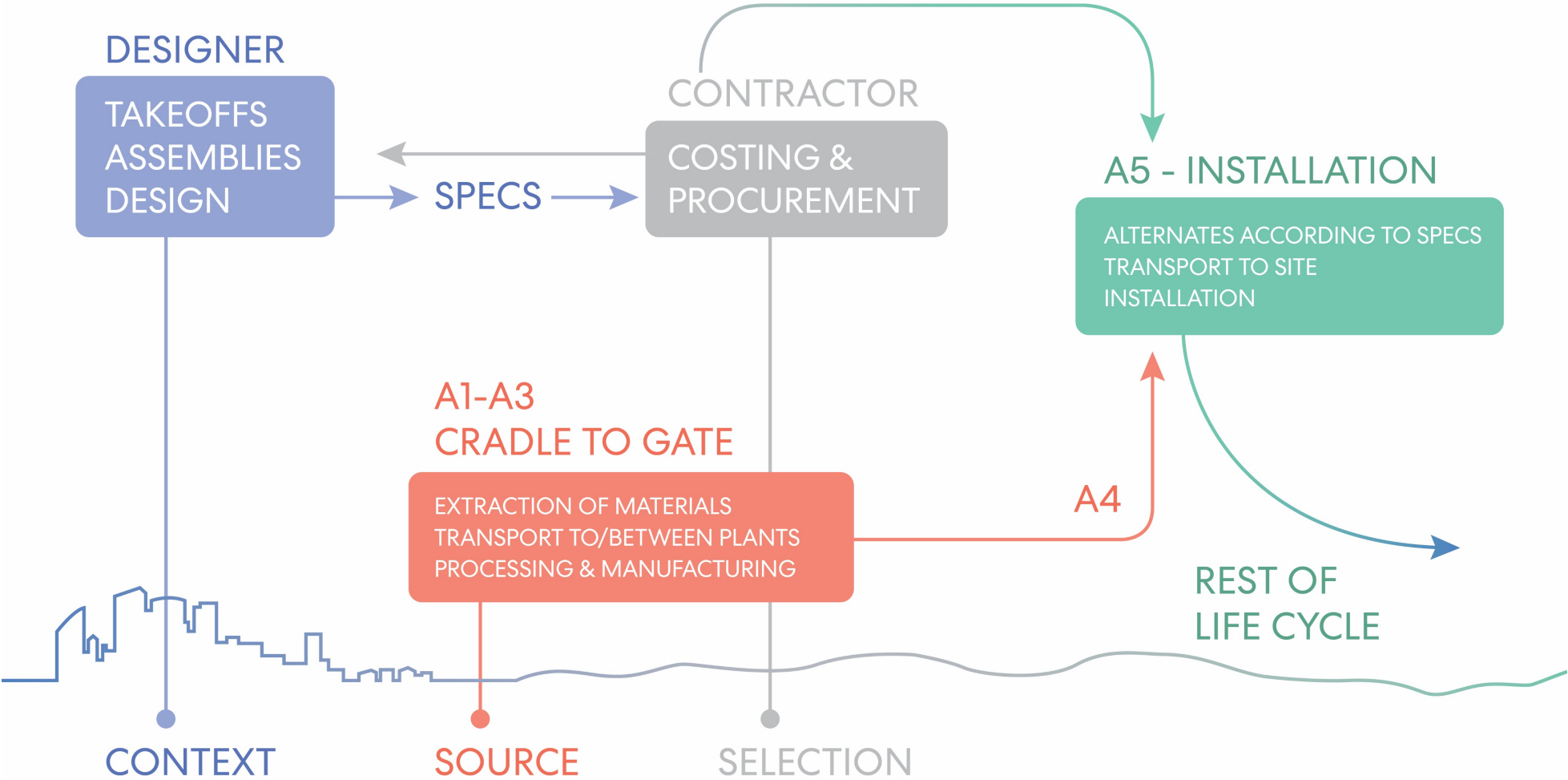**Some options for specification:**

- Establish a different dialogue from the get-go

- Bid out & procure from responses

- Procure specific materials and provide alts

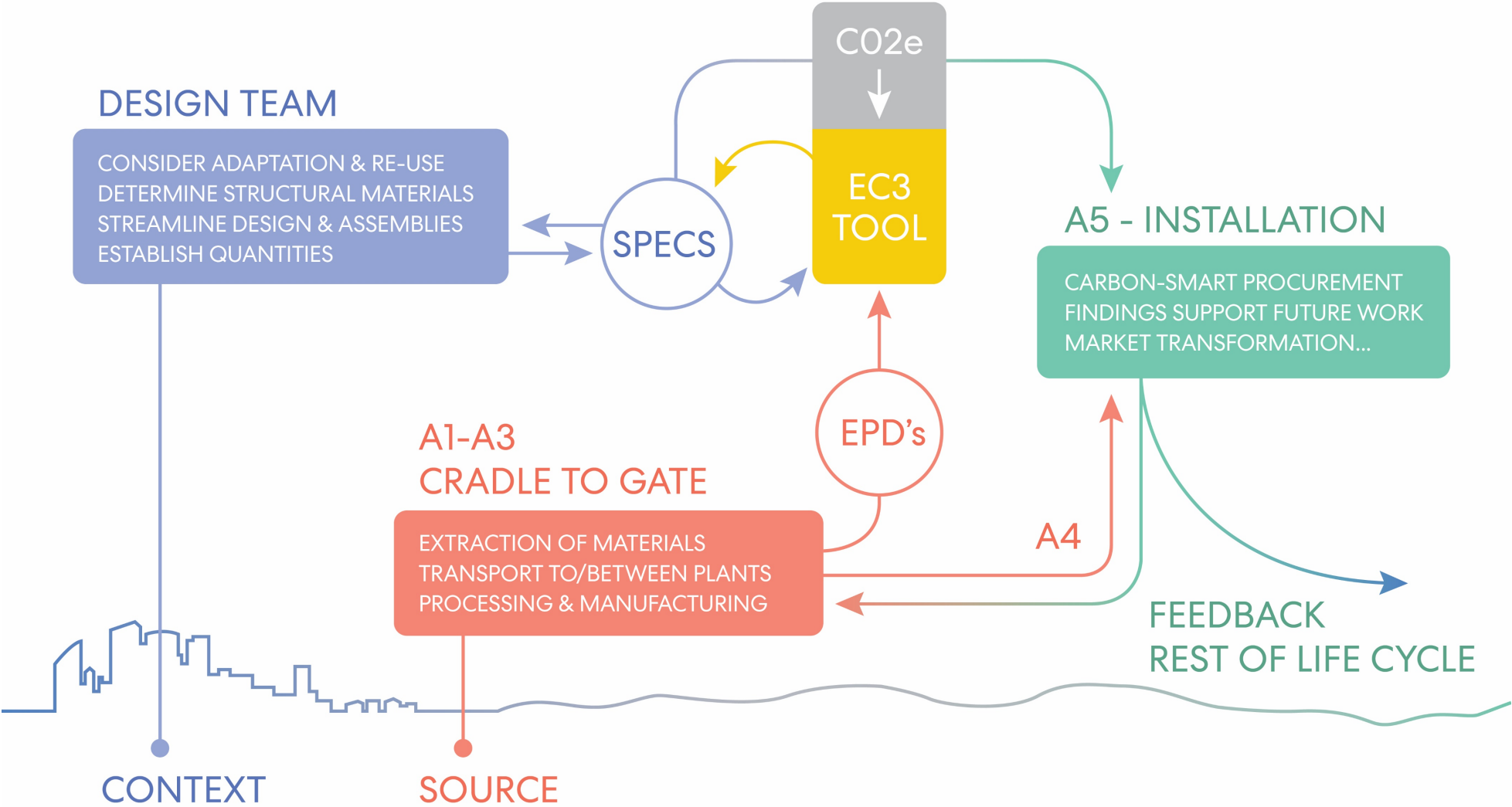- Require EPD's

- Set EC02e thresholds

→

Newark Civic Center.

Materials Procurement as a Linear Process

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Low-Carbon Procurement as an Iterative Process

DESIGN TEAM

CONSIDER ADAPTATION & RE-USE
DETERMINE STRUCTURAL MATERIALS
STREAMLINE DESIGN & ASSEMBLIES
ESTABLISH QUANTITIES

SPECS

CO2e

EC3 TOOL

A5 - INSTALLATION

CARBON-SMART PROCUREMENT
FINDINGS SUPPORT FUTURE WORK
MARKET TRANSFORMATION...

A1-A3
CRADLE TO GATE

EXTRACTION OF MATERIALS
TRANSPORT TO/BETWEEN PLANTS
PROCESSING & MANUFACTURING

EPD's

A4

FEEDBACK
REST OF LIFE CYCLE

CONTEXT

SOURCE

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Next Steps

- Establish an embodied carbon working group

- Case studies and benchmarking

- Work EC02e metrics into our existing sustainability goals

- Develop a workflow manual through comparative analysis

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