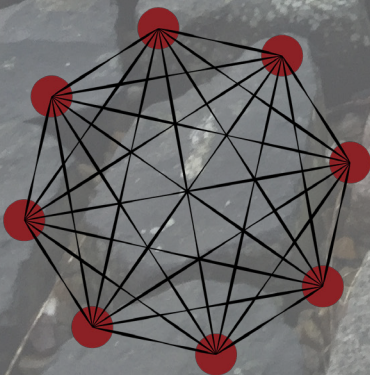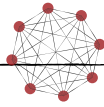helping adapt to a changing world

Landbase

community ventures

Engaging with Complexity to Build Resilience

The evolution of human environments, from cities to farmsteads, is not often viewed in ecological terms; we see the impacts of development on the living world but we are less adept at identifying the living qualities of our built environment.

This situation arises from the human ability to think in distinctly different modes. We process the complexity of the world around us through lateral thinking, a way of thinking that can hold on to seemingly unrelated yet coupled phenomena. When it comes time to make decisions or take actions, we rely on linear thinking--a way of rapidly reducing complexity.

Neither mode of thinking is right or wrong. However, these modes of thinking, whether used individually or collectively, result in distinctly different solutions to needs. During past phases of civilization, the ability to reduce complexity through linear thinking has allowed for focused development of technologies and industrial systems of extraction and production. Our modern notions of how we define efficiencies are grounded in this linear thinking. The power of linear thinking is the ability to isolate the component parts of complex systems. By isolating elements that compose a system we can then take action to make change within the system.
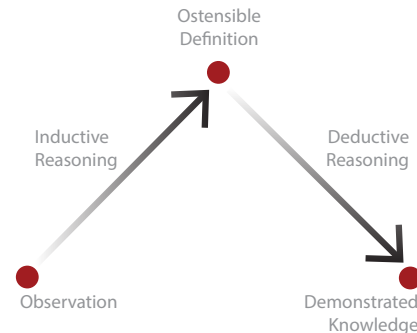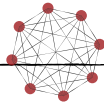

fig 1 Evolution has provided humans with brains that can reduce complexity through linear thinking: inductive, adding truths together to resolve on a larger truth; and deductive, peeling away truths to reveal a singular truth.

fig 2 The ability to reduce complexity to discrete points of understanding allows humans to isolate the steps required to solve a need.

In a world that involves massive and rapid changes
to planetary systems we are finding that linear and
isolating modes of problem solving are the root
of the changes humans have set into motion. Our
choices have been very successful, when evaluated
in isolation. However, rapid and massive changes
are bringing to light other ways to evaluate success.
The principle understanding that has emerged is that
human needs are inextricably bound to the needs of
the planetary systems. The solutions we seek will
necessarily be as complex and messy as the systems
and patterns of a living world. An embrace of lateral
thinking--tackling many needs simultaneously--can
allow human development to integrate into the living
systems of the planet.

When we apply ecological principles to understanding
and developing human habitat, the totality or pattern
of relations between humans and their environment
comes into focus. A pattern-focused approach reveals
that the living qualities of our built environments are
not works of singular design genius but artifacts of
complexity and negotiation over time.

The linear approach to assessing and making
decisions must necessarily ignore the complexity of
relationships. As we all know from the relationships
we have with other humans, complexity is not just
temporal but multi-dimensional. If we begin to reduce
people to a linear list of traits we ignore their true
complexity, which is developed through a lifetime of
learning, choices, and experienced environments. The
aggregate of a person must include all three axes
of dimensionality. The same holds true for all the
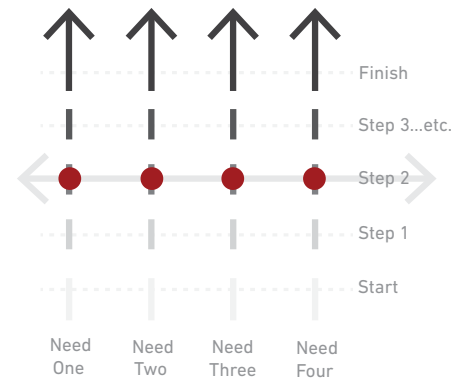components of the living world.

fig 3   *Lateral thinking is a capacity we all have.
Rarely do we simply think about one thing
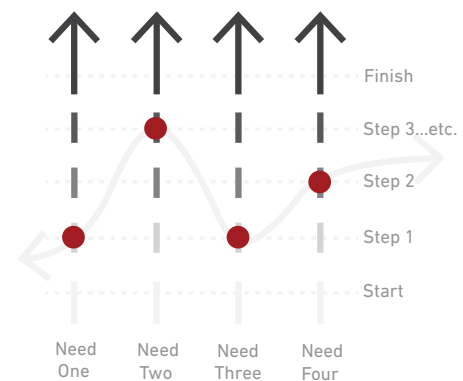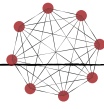in isolation.*

fig 4   *Lateral thinking permits us to deal
with sequential complexity as well as
complexity over non-standard time scales.
If we are thinking about human needs in a
changing world we can begin to see that
we must be addressing distinct needs
across time.*

Lateral thinking is the core of a community design process. When coupled with a land-based commitment, the outcomes must resolve human needs over time while integrating solutions into the fabric of living ecosystems and planetary processes.

The core of any design process is the phase of information gathering and problem identification. The standard practice model for delivering design services is for the professional designer to front load much of the research and analysis, even going so far as to do preliminary schematic design for a project space before ever engaging with the communities that will live with the outcomes. This is a linear approach, a practice that seeks to reduce complexity and results in discounting place-based knowledge.
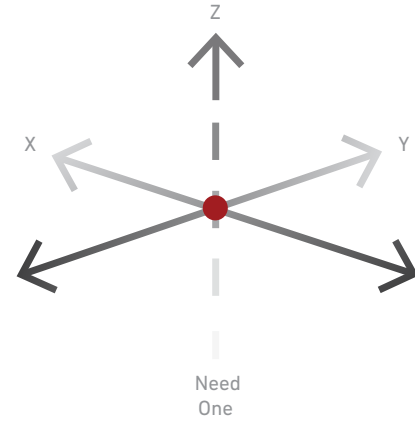
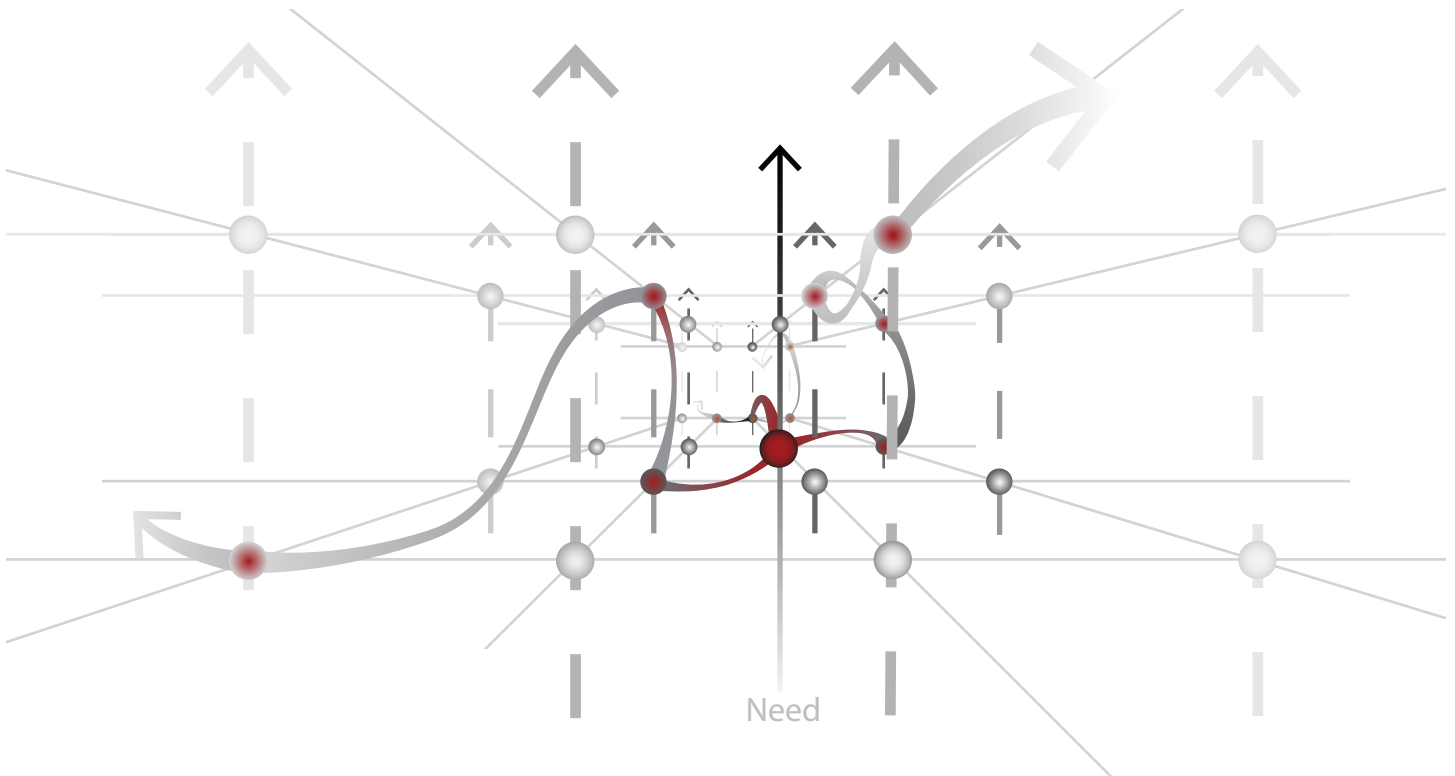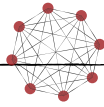*fig 5 Even singular needs, or individuals, require an embrace of multi-dimensional understanding.*

fig 6 No human need stands in isolation from other needs. The complexity of resolving on complex solutions requires a design process founded on an ethic that integrates human and ecosystem needs.

The Design Process is Complex

A community design process leverages the best aspects of linear and lateral thinking. The linear components are organized into clear steps that must be accomplished in order to solve needs. The lateral process seeks recursive explorations and demands that linear conclusions be continuously tested against new understandings.