

an introduction to  
needs based design

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a supplement to a thesis entitled:  
“Co-creating Community With a Needs-Based  
Approach to Urban Design and Planning”

Masters in Strategic Leadership towards Sustainability  
Karlskrona, Sweden  
Spring 2008



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# thank you.

*“There are no experts here. We are all co-learners.” – Bill Reed*

If you’re reading this, you have an interest in helping society move towards sustainability. We thank you for all your efforts as we work together to try to figure out how to make our communities healthier, more vibrant and liveable.

We also have a couple of special thank yous:

First, a thank you to our advisors. Richard Blume, as our primary advisor, helped us to clarify which ‘process of the process of the process’ we were actually talking about and provided us with invaluable feedback. Dr. Karl-Henrik Robèrt has challenged and inspired us all year and is responsible for the evolution of many of the concepts that we build from. Bill Reed has continually challenged us to explore the world beyond sustainability. And Grant helped us through our many, many edits.

We would like to thank the MSLS programme staff for their insight and strategic hands-off approach to leadership and learning. They have done a wonderful job at giving us the crucial guidance when needed. We wish you all luck on your own journeys.

‘Tack så mycket’ to each of the members of the MSLS class from whom we have learnt uncountable life lessons. We would also like to acknowledge those in the class that have attributed so much through their drive and energy to initiate, invite and invigorate the class around countless social and learning opportunities – thank you for making the year truly happen.

None of us would be here without the unconditional love and support of our close families and friends back home. If absence makes the heart grow fonder, our fondness is full!

And finally, our great appreciation goes to the planet on which we live. We collectively promise to undertake the challenge of leading society towards a positive and participatory and healthy relationship with the biosphere. We will live out each day seeking a deeper understanding of our own relationships with the communities in which we reside in order to take the best advantage of the opportunities that are afforded to us.

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A big thank you goes to our collaborators and interviewees that graciously took time to participate in our learning journey. We thank them for all of the input, insights and inspiration they were able to provide.

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# glossary

**ABCD analysis:** A strategic tool used within the Framework for Strategic Sustainable Development developed to backcast from basic principles of success using four steps (Holmberg & Robèrt 2000):

**A**wareness: FSSD + the motivation for pursuing sustainability

**B**aseline: An assessment listing all current assets and problems

**C**lear & Constructive Visioning: Solutions + visions

**D**own to Action: Actions evaluated using the strategic guidelines.

The ABCD analysis is used to inform the IDEA method.

**Backcasting:** A planning procedure where a successful outcome or vision of success is imagined in the future, followed by the question: “what do we need to do today to reach a successful outcome?”

**Barriers:** Challenges or obstacles that prevent people the opportunity to fulfil their basic human needs.

**Basic human needs:** A comprehensive set of fundamental needs that are culturally and historically universal, non-overlapping, non-substitutable, complimentary to one another, and seek continual satisfaction. They are: subsistence, protection, affection, idleness, identity, freedom, creativity, participation and understanding. (Max-Neef 1991)

**Co-create:** The collaborative creation of ideas and concepts between individuals and groups.

**Community:** A group of people who have one or many distinguishing component(s) of their lives in common. The parameter of the community is often defined as all those who live in the same geographic area.

**Firesoul:** An individual who adds significant character to the community, often described as someone who makes things happen and inspires others to do the same (James & Lahti 2004).

**Framework for Strategic Sustainable Development (FSSD):** A framework for strategic planning in complex systems that applies backcasting from sustainability principles to help guide society towards sustainability (Robèrt et al. 2002; Robèrt 2000).

**Holistic:** The inclusion or involvement of something in its entirety.

**IDEA method:** A strategic implementation tool used to apply Needs Based Design. The IDEA method has been adapted from the concepts of the ABCD analysis and uses the approach outlined by the Needs Based Design framework. It involves an understanding of the project’s intent (Intend), an understanding of the community’s needs and place (Discovery of needs and place), clear and constructive visioning of potential solutions to address the needs of individuals and the project (Envision), and an action phase where all participants begin the integrated design phase(s) (Act).

**Meaningful participation:** The act of taking part or sharing in something that invites transparency and honesty. This interaction forms a trustworthy relationship that positively connects with people on a personal level to fulfil the individual and community basic human need for participation.

**Needs Based Design (NBD):** A strategic approach, framework and tool, adapted from the FSSD, for structuring and implementing urban design and planning processes.

**Project:** One specific effort in the development of the human built environment

**Residents:** The people who inhabit or occupy a community or building, also considered to be the occupants.

**Shared vision:** The capacity to hold a shared picture of the future sought to be created. It consists of two components:

- Core ideology: The enduring character of an organisation, or a consistent identity based on a set of core values and a core purpose.
- Envisioned future: A 10-to-30 year audacious goal and a vivid description of what that goal would look like.

**Sustainability Principles:** Generic principles used to define sustainability from a science-based, whole systems perspective:

In a sustainable society, nature is not subject to systematically increasing ...

1. concentrations of substances extracted from the Earth’s crust,
2. concentrations of substances produced by society,
3. degradation by physical means

and, in that society...

4. people are not subject to conditions that systematically undermine their capacity to meet their needs. (Ny et al. 2006; Robèrt 2000)

**System:** The institutions, structural influences and natural cycles beyond the neighbourhood, that define the broader environment of which the neighbourhood and initiative are a part. Examples include society, the natural environment, and the biosphere.

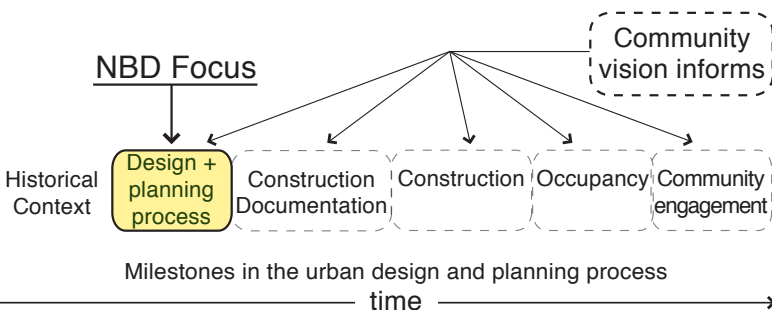
# an introduction...

This introduction to Needs Based Design is intended to give you the basics for exploring where its approach, framework and method may be used within your community design and planning projects.

These pages will not tell you how to go about completing a design or planning project or how to manage it. Schedules, budgets, project communications, meeting times and facilitation, tools, techniques, indicators, standards, public relations, marketing efforts, deliverables and documentation are inevitably unique to each project, and cannot be dictated by a theoretical process. Needs Based Design does not have checklists of the things that should be included in a successful project and it does not contain the answer or solution for reaching sustainability.

Rather, Needs Based Design focuses on the questions of 'why' certain mindsets, structures and processes have greater potential for helping us reach success, and 'who' should be involved to make the most of everyone's time and efforts along the way. The next 51 pages ask some good questions to allow you to explore your own solutions.

We will first touch on the state of green design and planning and the major shortcomings that our research identified within those approaches. Next, we will discuss the gaps found in current practice, and then it will dive into Needs Based Design and its approach, framework and method for application. The

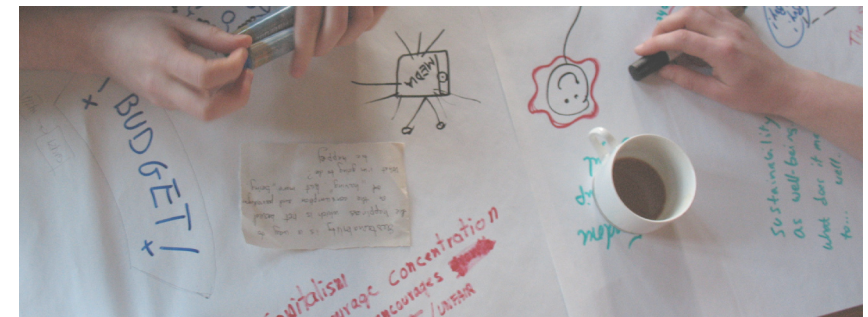


IDEA method will be elaborated on in detail to give you, the reader, the introductory know-how to apply Needs Based Design to any development project.

It should be noted that Needs Based Design has still to be implemented into a project. It is a theoretical process developed as a thesis project for the Masters in Strategic Leadership towards Sustainability (MSLS) program in southern Sweden early in 2008. Needs Based Design is based on a framework (the Framework for Strategic Sustainable Development / The Natural Step framework) and planning method (ABCD) that have been used with great success by hundreds of organisations to help them take significant and strategic steps towards sustainability. While our research considers Needs Based Design to be theoretically robust and valid, the real test will be putting it into practice.

Because of its roots as academic research, all of the theories and knowledge presented within this guide are not proprietary, but available for free use within the public realm. We consider this information to be 'open source', a point for discussion and an effort that is to be informed further by the knowledge, expertise and experience of those who are able to contribute to its development. We ask however, that our work is properly referenced when it is used, and that you won't hesitate to contact us with your questions, comments and case studies as they come up (our email addresses are on the 'about the authors' page).

We need to move quickly and strategically towards sustainability, and we look forward to working together with you to do so.



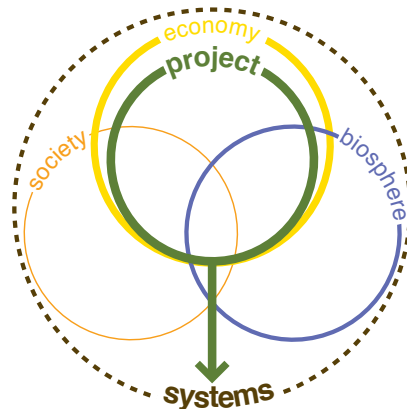
# green design today

There is a great interest and clear passion for green and sustainable design right now that we hope will only grow and flourish with time. Those working in this way should be rightly commended for their efforts.

Generally, green design approaches aim to reduce the environmental impacts of building and construction projects by increasing the efficiency of building systems, using rapidly renewable or recycled materials, and providing healthy indoor air quality for living and work spaces. Green design has made much progress in recent years and can be heralded for making strides in the right direction, especially in terms of new technologies and building techniques.

While green design is more progressive than conventional design, green design tools and techniques will not be able to deliver a sustainable society by themselves. These efforts still harbour many of the same flaws as conventional design, as green design approaches community development from a mechanistic 'inside-out' view, has a faint understanding of the social implications of design, and often lacks structure and a common language for working together with the many stakeholders involved.

The triple bottom line is a common mental model that is used to describe the aims of green design projects: they should be good for people, the planet and profits. Environmental concerns are addressed by studying the impacts the project will have on habitat, water, air and land. Projects are largely constrained by economic factors that form the basis for decision-making. Social consideration is required to gather 'input' from 'key stakeholders' through consultation, usually only after major design decisions have



## Green design strengths + weaknesses

Here is a quick overview of some of the strengths and weaknesses that current approaches to green design and planning provide:

### Strengths of Green Design:

Green design and planning:

- Is based on a general desire to act responsibly in making design decisions and to have less impact on the environment and local infrastructure;
- Strives to use a process that is more holistic, integrative, and inclusive than the process for conventional design;
- Abides by societal laws and considers the laws of nature and natural energy flows;
- Produces buildings that raise the standards for resource efficiency and reduce energy consumption, and
- Utilises project structures and processes that are familiar to all in the fields of design and development.

### Weaknesses of Green Design:

In the course of our research, we heard overwhelming agreement that there is a fundamental need to change the way things are done. Within current approaches to green design:

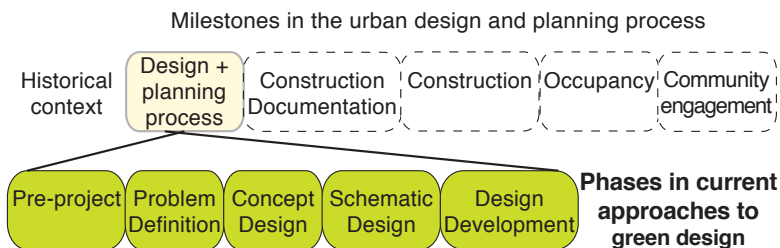
- Communication gaps between parties working on the same projects are not uncommon;
- Shared visions are rare;
- Green design techniques by themselves are recognised to be insufficient to reach sustainability;
- Community education and expectations are ill addressed;
- Market acceptance for green designs and innovation is still under question, and
- The general impression of development is a negative one. Many of the urban spaces we have are often dysfunctional, unattractive or both. Promises made to communities often remain undelivered.

already been made. The needs of the community are mitigated monetarily through park, school and infrastructure fees.

Projects usually begin with an inventory of all of the things existing on a site – buildings, circulation, utilities, flora and fauna, water resources and people existing there today – quantifying the ‘parts’ that will make up the structures to be erected there. The architectural program, the forms and the technical solutions are derived to meet the developer’s requirements. Broad solutions to meet these challenges are generated from the very first moment the site plan arrives by a few key designers, and specialists who are brought on as-needed to study the project components and the impacts they will have.

In this way, current approaches can be characterised as ‘inside-out’, as the project itself is the first and most important focus of the design process. Its impacts on the surrounding systems are considered, studied and documented after the design has been completed.

The parallels with conventional design are also apparent in the structure of the project process, as green design projects are often completed in the same way as all other projects. In general, projects unfold in five phases: Pre-project, Problem Definition, Concept Design, Schematic Design, and Design Development. The client usually completes the first two phases and hires a consultant team to complete the concept, schematic and design development phases.



These shortcomings are significant, but realising and addressing them are just half the battle. We need to figure out the best ways to harness all of the great energy in green design to work together to advance the conversation about how we can achieve sustainability together....

## Three big shortfalls

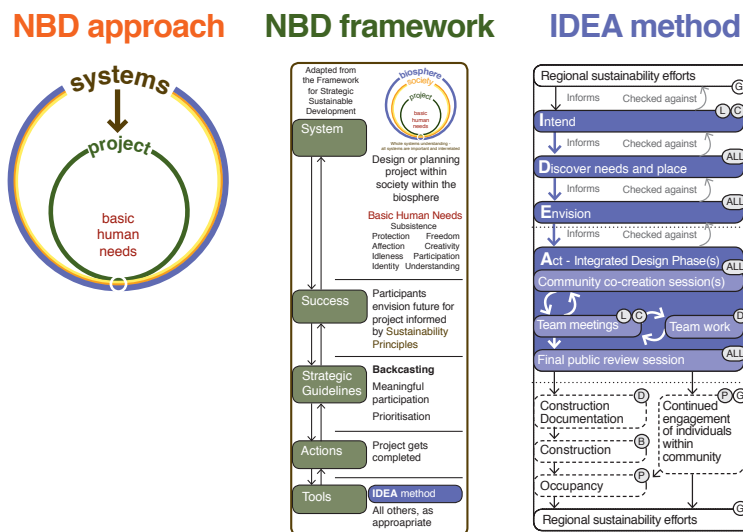
In general, there are three main shortfalls to the current way things are done. These need to be addressed if our hopes to build sustainable communities are to be truly realised. Current approaches:

- Lack a **systems perspective**. They often address sustainability from a limited and mechanistic perspective of the objects on the site only, neglecting a comprehensive whole systems perspective.
- Lack the sufficient means to consider the **social aspects** of sustainability. Current approaches to green design are recognised to poorly consider social considerations of sustainability. Although social ‘well-being’ and the notion of ‘creating community’ are commonly referred to by green developers, limited insight into how to fulfil of these considerations often over-rides the ability to address them.
- Lack **structure and a shared language** for working together. Green design uses checklists and standards that quantify pieces of the whole, but constrain creative solutions by requiring certain conventional features or techniques. This structure for planning and designing a project is not founded on strategic planning and decision-making. Confusion between the use of strategies and tools is also common, as tools like LEED® green building standards and other rating systems are used to define the strategy for the process. In addition, without workable definitions for sustainability and a shared vision (definition of success), the focus and direction of a project are rarely shared between the project participants.

# needs based design

Needs Based Design is a systems-thinking approach that provides design, development, and planning teams with a common language, strategy and method for designing, constructing and maintaining the physical and social infrastructure of a sustainable society. It consists of an 'outside-in' approach, a planning framework, and a tool to implement it, referred to as the 'IDEA method'. Each of these components support one another in the pursuit of a successful project.

Based on a comprehensive study of basic human needs and scientifically derived principles for achieving global sustainability, Needs Based Design aims to address sustainability holistically by addressing the three main shortfalls within current approaches.



## Filling the gaps

Needs Based Design tackles the challenge of designing for sustainability. It:

- Uses **systems** thinking. The larger context that the project participates in is always considered first and the project is designed to support and contribute to ecological and socio-cultural systems.
- Provides a way to deal with complex **social** issues by focusing on the needs of individuals both in the project team and throughout the community at large. The needs of individuals are considered by addressing human needs at a fundamental level.
- Uses a **structured** and robust framework and shared language to spur and advance dialogue about how to move forward together towards co-created and well-defined goals.

## Will it pencil out?

We think there is a great business case for using Needs Based Design, but because it has yet to be put into practice, we can't make a definitive just yet. With that said, anecdotal evidence suggests that utilising many of the techniques we outline can help mitigate risk and deliver many benefits, including solid financial returns.

Money drives all development, and for good reason. Without it, the social pact that it represents – providing something of value to be recognised as work – collapses, and no work gets done. Needs Based Design considers money in this context – as a social tool to catalyse development and not as a goal in itself. We all require a relatively continual flow of money to make things happen, and therefore, we should not take steps that do not provide a reasonable return on investment. The show must, and will go on – the bigger issue is deciding which acts make up the performance.

# who and why?

## Who can use Needs Based Design?

Any team with a design or planning project to complete.

The Needs Based Design approach can be applied to any design or planning project from a single office building to a new neighborhood development, to an entire regional plan. It provides a broad platform for change.

- **For government**, Needs Based Design provides a way to realise regional sustainability goals at a practical project level and encourage the maximum potential from development efforts within your community.
- **For developers**, Needs Based Design provides a way to work with the many interests within communities to realise the greatest potential returns on a planned project.
- **For designers and planners**, Needs Based Design provides you with a common language, and supports your greatest creative abilities to encourage you to design and plan beyond current norms.
- **For communities and citizens**, Needs Based Design provides a way to express your needs and positively influence the decisions that will effect how you are able to continually explore and expand wellbeing within society now and in the future.

Needs Based Design pays attention to both the physical and social aspects of both new and existing communities. It creates a way to move forward together by providing a common language, an understanding of successful outcomes, and the space for dialogue and creativity to help to define and pursue our goals for sustainability within a community.

## Why use Needs Based Design?

Sustainability is more than just a design problem.

We must change the ways we make our place in the world. We are seeing a dramatic decline in our wellbeing and the opportunities available to us as we confront the problems of unsustainability.

Continuing with business as usual and the same thinking that has contributed to this situation is simply dangerous. We must explore new approaches that move beyond the creation of better 'things' to those that help support the flourishing of natural and social communities.

Needs Based Design contributes to this dialogue of change. It's approach to design is fundamentally different than the ones most commonly used today. It supports a shared and rigorous definitions of success and allows its participants to discover and co-create ways to positively participate in the places they love. **Needs Based Design plants and nurtures the seed of individual and community change for the growth of sustainable society.**

We recognise that this fundamental need for change must be widespread and occur soon. This guide only provides a place to begin. The journey is yours to take.

# nbd approach

Needs Based Design understands there to be two components of a team's approach that are indispensable to arrive at success: approaching a project from the 'outside-in' and from a people-centred perspective.

Needs Based Design is based in systems thinking which challenges us to view 'things' with respect to how they fit within the structures and constraints of the larger 'whole'. It recognises that all projects can participate in a positive or negative manner within the larger systems, which ultimately allow for their existence. Needs Based Design asks design teams to first gain an understanding of the needs within the larger systems that they will complete their project in. Then, and only then, is the project itself considered in order to pursue design features that allow individuals to fully and actively participate in those larger communities.

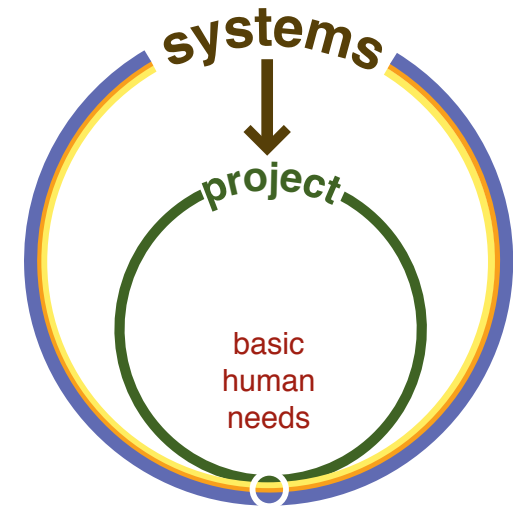
Secondly, Needs Based Design starts with people. As explained by Manfred Max-Neef (1932 - ), a Chilean economist and creator of the theory of Basic Human Needs, "development is about people, rather than objects". Understanding the basics of what individuals need to foster sustainable behaviours sets a foundation upon which all other decisions can be made. As part of the approach to Needs Based Design, the core design team is asked to focus on and understand the concept of basic human needs.

With this said, the approach is the least well-defined part of Needs Based Design and the area that can be best personalised by each project team to meet and enhance their larger goals. Understanding systems thinking and taking a people-centred perspective should only be the minimums. Beyond them, Needs Based Design is completely dependant on the intents and aims of the individuals using it. Teams who would like to pursue a greater vision, such as restorative or regenerative projects, are encouraged to do so.

So let's discuss both components a little more, before we dive into the Needs Based Design framework and the IDEA method.

*"The best development process will be that which allows the greatest improvement in people's quality of life."*

– Manfred Max-Neef, economist



Whole systems understanding -  
all systems are important and interrelated

# systems thinking

*“By looking at just the project, and not the larger whole, you are inherently promoting non-sustainability.”*

– Tim O’Riordan, UK Sustainable Development Commission

Systems thinking is a science that deals with the organisation of logic and integration of disciplines within complex systems. It helps us understand and clarify existing patterns and relations underlying intricate problems by looking at things holistically. It helps us address patterns and relations to effectively begin a process of change.

Systems thinking challenges us to view things with respect to how they fit within the larger whole. Understanding that things and people are interrelated and interdependent, and exist within larger systems, provides a starting point to address sustainability.

Incorporating systems thinking into Needs Based Design implies seeing things from an ‘outside-in’ perspective. Needs Based Design:

1. Approaches sustainability from an overviewed perspective and a shared co-created vision of success. Green design, on the other hand, often promotes the use of ‘check-list’ solutions that can promote progress in the creation of better *parts* within a project, but that still do not address the *whole* and its relationship with its surrounding community.
2. Provides a complete and sufficient foundation for the development of the project itself. It is informed by holistic studies of the ‘place’ in which the project can positively participate, and the needs of the people in that place.

The way we define sustainability within the view of systems thinking is important. A project cannot actually be ‘sustainable’, as no one ‘thing’ can ever be. Systems can be sustainable, but ‘things’ cannot. Rather, sustainability is a state constantly pursued, but never finished. The semantic difference is subtle but important as it helps to define the role that projects play in natural and social systems.

## A ‘sustainable’ project?

No one *object* or *thing*, including a built project, should be labeled ‘sustainable’. *Actions* taken to help achieve and maintain a system *can* be sustainable, but ‘things’ by themselves *cannot*. This is a subtle, but important change in mindset to achieve the jump from focusing on ‘things’ to focusing on ‘systems.’

Even trees in all of their beauty and brilliance should not be labeled as ‘sustainable.’ While alive, they cannot survive without a constant supply of sunlight, air, water, and nutrients. They are fully dependent on the healthy functioning of the overall forest system. Conversely, the survival of the forest ecosystem depends on the positive participation of individual trees in a way that does not degrade the forest as a whole. Furthermore, forests are dependant on global climate and weather patterns – alone, even forests are not ‘sustainable.’

Ironically, although forests themselves cannot be termed ‘sustainable’, their continued harvesting can be. *If* done in a way that does not contribute to the degradation of the whole system, ‘sustainable forestry’ within the larger system *is* possible.

In the same way, a *social community* of people can be sustainable if their actions do not systematically degrade the systems around them. But a *physical project*, like a neighbourhood development project, cannot be sustainable as the buildings themselves, like trees, are just ‘things.’ It is the actions the inhabitants take to build, maintain and live in those houses that define the community’s ability to be ‘sustainable’ in the long term.

# needs in design

*Sustainable development "...meets the needs of the present without compromising the ability of future generations to meet their own needs"*

– UN Brundtland Commission

The term “needs” in this work has a dual purpose. It addresses both the basic human needs of individuals within the community (including the project team) and the needs of a sustainable global society, both now and in the future as defined above by the Brundtland Commission. In their broadest sense, development and human needs are components of the same equation. “The best development process will be that which allows the greatest improvement in people’s quality of life” (Max-Neef).

Basic human needs are universal. They are the same for all people for all time. But their satisfiers – the ways to fulfil them – are not. They differ and change between both culture and circumstance, and are most influenced by societal norms and forces. We use the same non-hierarchical set of needs that Manfred Max-Neef defines as fundamental:

## BASIC HUMAN NEEDS

**Subsistence • Protection • Freedom • Affection • Creativity  
Idleness • Participation • Identity • Understanding**

We intend Needs Based Design to support the design of satisfiers that can help fulfil numerous needs for the most people. For example, a clock tower could help satisfy the need for identity within a community, but an annual art fair might use that same money in a way that also helps satisfy the needs of participation, creativity, understanding, freedom, idleness as well as identity. Our challenge is two-fold. First, to come up with elements that best support people’s continual efforts to meet their own needs, and secondly, to remove both physical and societal barriers that inhibit these same needs from being met.

## The basics of needs

An understanding of the following points and subtleties is encouraged to develop a shared understanding of basic human needs, and get everyone on the same page.

- **Basic needs are never actually ‘met’ or ‘satisfied’ for good** – they must continually be met within time and place. Needs never change, but the satisfiers selected to meet them do, and must do so on a continual basis. This is true for all of our needs – we are constantly looking for ways to satisfy them.
- **Basic needs are often confused with satisfiers and the goods that serve to satisfy our needs.** We often say things such as ‘what we need is more park space.’ A basic needs perspective on this statement would rephrase it as ‘a park will provide us with a space to experience our needs for idleness, identity, participation, creativity and freedom.’ A society’s culture is defined by the ways the people within it use satisfiers to address their needs.
- **Barriers inhibit the fulfilment of needs.** Constant work is required to recognise and minimise the barriers that exist to the fulfilment of human needs. This consideration is especially pertinent in development projects – asking what barriers people experience in meeting their needs may be just as important as asking them what new features they want designed and planned for in their community.
- **A deprivation of one or multiple basic need(s) implies poverty and opens the door for opportunity.** Seeing needs in terms of deprivation also provides an understanding of how to define ‘poverty’ and ‘potential’ for action within society. For example, subsistence poverty may lead to crime and has the potential to result in other people feeling the need to protect themselves through gated communities, the built form therefore creating alienating spaces. However, the identification of unmet needs within a community also provides a leverage point to engage, motivate and mobilize people.

# nbd framework

The Needs Based Design framework builds on the strengths of the Framework for Strategic Sustainable Development and applies these concepts to the urban design and planning process within the five level framework as follows:

**System (Level 1):** Needs Based Design considers a project to exist within society within the biosphere – both the biosphere and social systems set the boundaries within which the project can function. All systems are important and deeply interconnected and must be considered with a patterns-based understanding of needs and place.

**Success (Level 2):** Success in the design and development of a Needs Based Design project will afford individuals the opportunity to consistently and abundantly realise the fulfilment of their needs within a sustainable community. A project built on a co-created vision for success has a firm platform from which project teams and the larger community can create a shared understanding of both the ‘what’ and ‘who’ of the place that the project will participate in.

Needs Based Design uses the FSSD Sustainability Principles to help define success. They outline the minimum conditions that society must fulfil to curb our current path of unsustainability and are phrased in the negative (i.e. “natural systems are NOT subject to...”). Within these constraints, any and all other actions are encouraged, and any team going beyond these minimums are welcome do so (and will probably have an even easier time to implement the project as they work with, rather than against, natural and social systems).

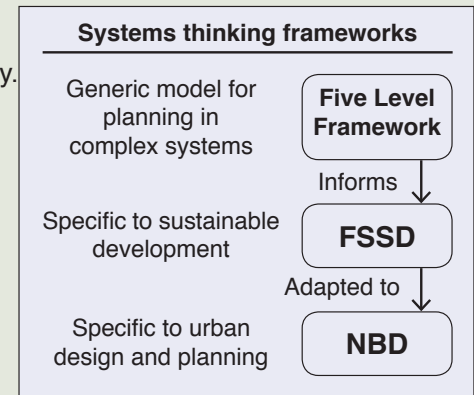
All decisions are made in a way that help move the project closer to complying with the Sustainability Principles. This may seem arduous at first as they are non-prescriptive and can be challenging to apply, but their fundamental basis provides tremendous worth in helping to define what successful efforts must consider. ‘What do the SPs mean?’ at the back of this Introduction may help to guide you through their application.

## Interrelated frameworks

The Needs Based Design framework was adapted from the Framework for Strategic Sustainable Development (FSSD - commonly known as the Natural Step framework). The development of the FSSD was initiated by Swedish cancer specialist Dr. Karl-Henrik Robèrt in the late 1980’s and is used today by The Natural Step, an international NGO founded to help advance society towards sustainability.

The FSSD is designed to aid teams in choosing appropriate tools (level 5) to take deliberate actions (level 4) by applying strategic guidelines (level 3) to help advance towards success (level 2) within interconnected and complex

systems (level 1). It encourages dialogue and incremental change and is an effective way of planning for sustainability within complex systems. The framework provides a widely applicable “backcasting from Sustainability Principles” approach for use at multiple scales and contexts (global, national, business, community and individual).



### Sustainability Principles for Needs Based Design Projects In a sustainable society:

4. people are not subject to conditions that systematically undermine their capacity to meet their needs,

### And natural systems are not subject to systematic increase in:

3. degradation by physical means,
2. concentrations of substances produced by society, and
1. concentrations of substances extracted from the Earth’s crust.

**The Strategic Guidelines (Level 3):** Strategic guidelines are the essential concepts that project participants must use to achieve a successful outcome. Needs Based Design uses ‘backcasting’, ‘meaningful participation’ and ‘prioritising guidelines’ to strategically move projects forward.

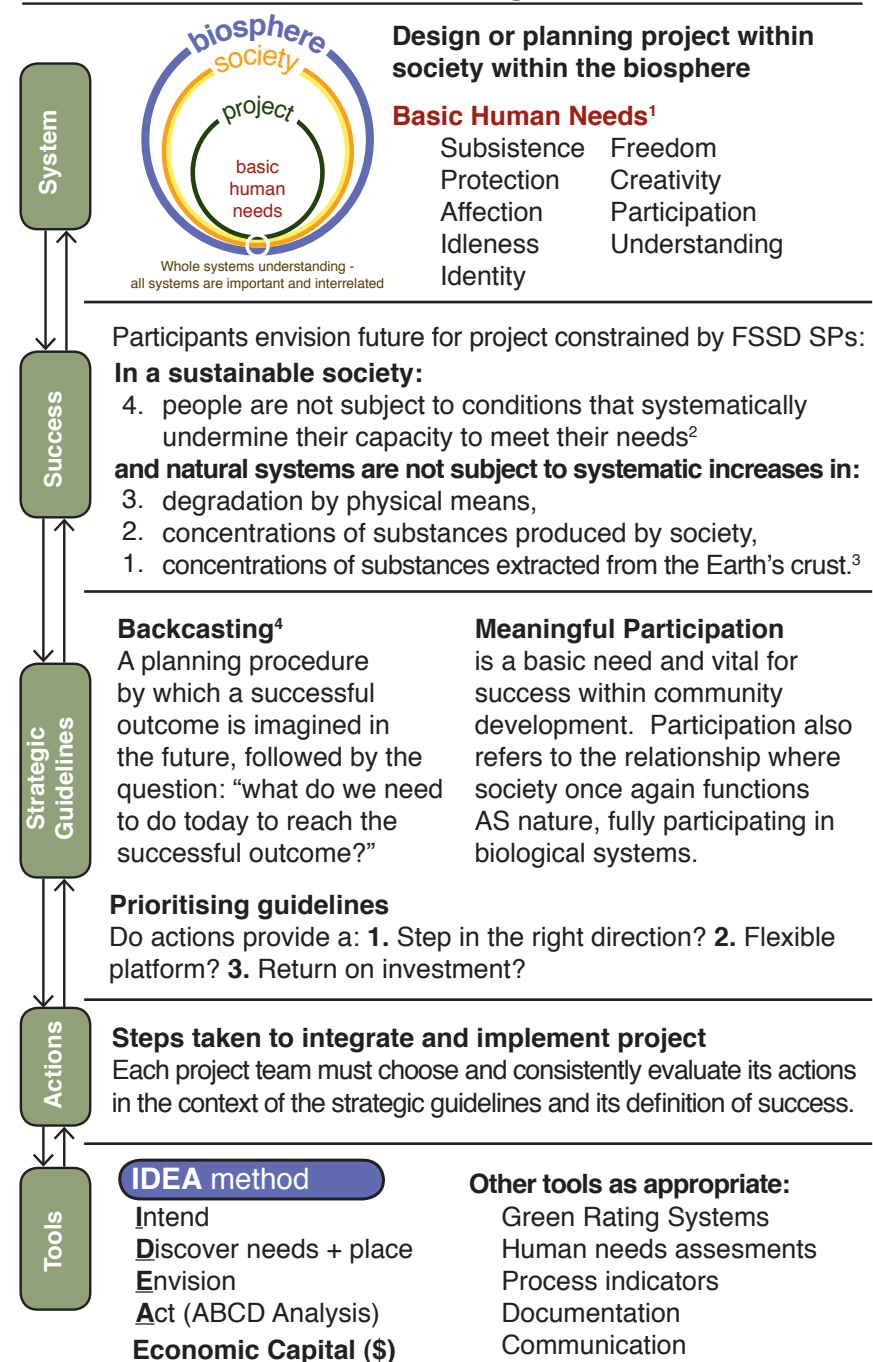
**Backcasting** is a planning procedure where a successful outcome or vision of success is imagined in the future followed by the question: “what do we need to do today to reach a successful outcome?” It allows participants to create their community without constraining themselves by the problems of today, i.e. forecasting. Potential answers and actions, no matter how creative, are then brainstormed and prioritised so that they can be implemented in a strategic manner based on the prioritising guidelines described below.

**Meaningful participation** is recognised not only as a basic human need, but also as a strategic guideline because of its importance in the process of design. Past experience recognises that participation can open the conversation to personal agendas and values, therefore slowing the process and potentially lowering the level of discourse. But increased participation in the creation of the community vision and planning phase has huge potential to optimise chances for success. Give it a shot. We will provide more thoughts on this after introducing the IDEA method.

**Prioritising guidelines** allow the project to be tackled from a strategic perspective. Design teams must ask themselves the questions below:

- Does this measure proceed in the right direction with respect to the vision and therefore all Sustainability Principles?
- Does this measure provide a stepping-stone (i.e. ‘flexible platform’) for future improvements towards sustainability?
- Is this measure likely to produce a sufficient return on investment to further catalyse the process, including ecological, social and economic returns?

## Needs Based Design framework

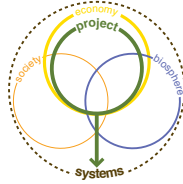
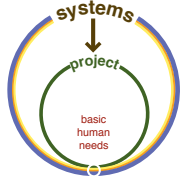


**Actions (Level 4):** The Actions level describes the strategic steps prioritised through backcasting, taken to complete the project. This level is completely defined by the project team as the framework does not dictate any specific actions. The project must get done. Actions are strategically selected by backcasting from a vision of a successful project based on the Sustainability Principles and then prioritised according to the prioritising guidelines. What is important to remember is that each and every action does not have to comply completely with the Sustainability Principles, but together must show logical progression towards achieving the goals of success.

**Tools (Level 5):** The main tool to implement Needs Based Design is the IDEA method (refer to the next section). All other tools are carefully selected to provide capacity, structural and systematic support and integrity to the project. They may include but are not limited to the following: LEED®, BREEM® and financial capital.

## A comparison...

The table to the right highlights the gap between current approaches to green design and the Needs Based Design approach.

	Green design approaches	Proposed NBD approach
	 <p>“Inside-out”</p>	 <p>“Outside-in”</p>
<b>System</b>	<ul style="list-style-type: none"> <li>Mechanistic, linear</li> <li>Fragmented perspective</li> <li>An understanding of ‘place’ and ‘needs’ is often confused with the ‘wants’ of only the people directly involved</li> </ul>	<ul style="list-style-type: none"> <li>Holistic</li> <li>Pattern-based perspective</li> <li>An understanding of ‘needs’ is based on nine culturally and historically independent basic human needs</li> </ul>
<b>Success</b>	<ul style="list-style-type: none"> <li>Common understanding of sustainability is rare</li> <li>Economic gain (\$)</li> <li>‘Green’ design intention to ‘reduce impacts’ of development’</li> <li>Vision determined by owner</li> </ul>	<ul style="list-style-type: none"> <li>Common, scientific understanding of sustainability</li> <li>Design within, and beyond the constraints of the FSSD Sustainability Principles</li> <li>Vision co-created with community</li> </ul>
<b>Strategic Guidelines</b>	<ul style="list-style-type: none"> <li>Often constrained by forecasting</li> </ul>	<ul style="list-style-type: none"> <li>Backcasting</li> <li>Meaningful participation</li> <li>Prioritising guidelines</li> </ul>
<b>Actions</b>	<ul style="list-style-type: none"> <li>Use conventional project phases and structure</li> <li>Project considered first</li> </ul>	<ul style="list-style-type: none"> <li>‘Front loaded,’ progressive process</li> <li>Community considered first</li> </ul>
<b>Tools</b>	<ul style="list-style-type: none"> <li>Green Rating Systems</li> <li>Cradle to Cradle</li> <li>Matrices</li> <li>Measurements &amp; indexes</li> </ul>	<ul style="list-style-type: none"> <li>IDEA method</li> <li>ABCD Analysis</li> <li>Economic Capital (\$)</li> <li>All Others</li> </ul>

# IDEA method

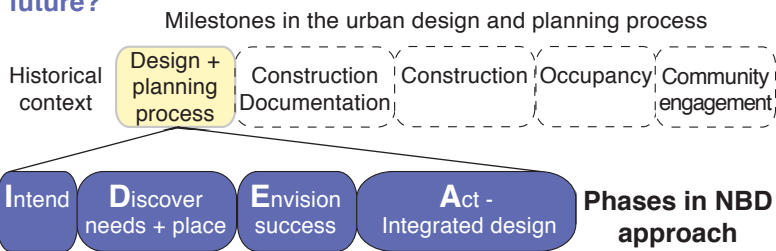
The Needs Based Design approach is implemented using the IDEA method and consists of the following phases: Intend, Discover, Envision and Act. As seen in the IDEA method figure to the right, Documentation, Construction, Occupancy and Community engagement all fall outside of the design process in this context.

**Intend.** The 'Intend' phase begins with a commitment from the participants that the project will be designed and implemented in a way that will allow for its creators and future occupants to actively, artfully and positively participate in the social and natural systems of the community. This phase asks the team to answer: **What do we intend to create?**

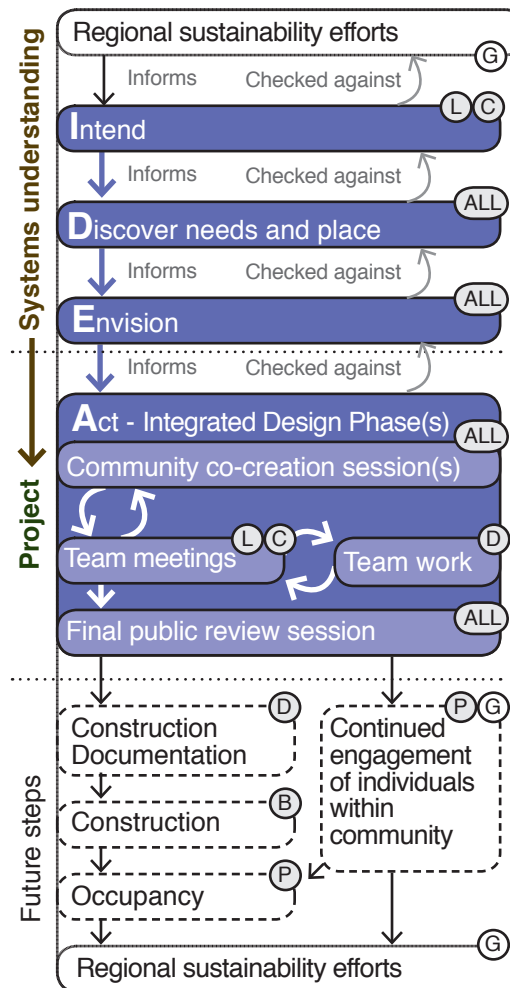
**Discover needs and place.** IDEA continues with the 'Discover' phase. A commitment from the team members to fully understand their own needs as individuals, the needs of the community's social networks and the requirements of the surrounding ecological systems are acquired. This phase asks the team to answer: **What allows life to flourish within us and within this community?**

**Envision.** A shared vision and story of what the project intent is aiming to achieve is the 'Envision' step of the IDEA method. The goal of this step is to solidify what the project participants see as 'success' with reference to the project. This phase asks the team to answer: **What will we create to contribute to the flourishing of life in this place?**

**Act.** It is only now in the 'Act' phase that focus turns directly to the project itself. The goal is to build from the project's intent and understanding of needs and place to fulfil the participants' vision to its greatest potential. This phase asks project participants to answer: **How can we fulfil the project's vision to allow people the opportunity to meet their needs both now and in the future?**

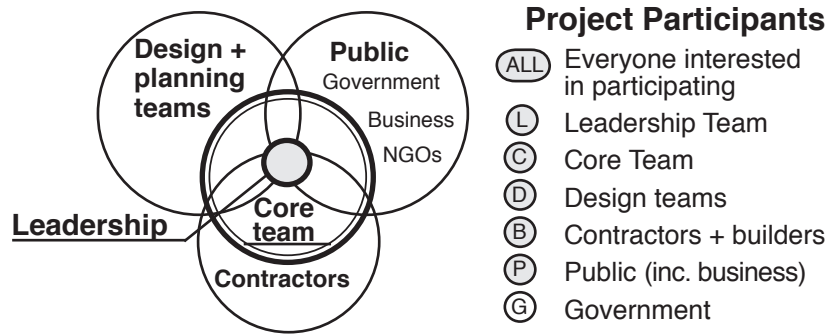


## IDEA method



### Phase questions

- What do we intend to create?
- What allows life to flourish within us and within this community?
- What will we create to contribute to the flourishing of life in this place?
- How can we fulfil the project's vision to allow people the opportunity to meet their needs both now and in the future?
- What can we do to continually meet our needs and positively participate in the flourishing of this place?



# IDEA Guidance notes

The questions, inputs, outputs, tools and resources listed below **are just the beginning and are meant as a starting point rather than an exhaustive list.** We look forward to learning from you those things that you found to be helpful or hindering in your own practices. ...Now, let's get to it!

The guidance notes for each IDEA phase consist of the following:

## Phase question

This offers a point of reference for each phase. The more thoroughly the question is answered, the better equipped the participants are to move onto subsequent phases.

## Guide notes + questions:

These assist in the application of IDEA, helping participants explore the phase question.

## Inputs:

These are the necessary resources to successfully address the phase question (e.g. participants, information). Time and economic capital are of course always required.

## Outputs:

Expected outcomes from each phase should reflect the best answer possible to the phase question.

## Tools + resources:

These consist of other inputs that may contribute to the completion of the phase. Their use and effectiveness will vary depending on the project, the team and the strengths of the facilitators. Tools and resources are not specific to just one phase and should be considered for use throughout as appropriate.

## Guide notes + questions for all phases:

- Each person who joins the project team is made aware of the NBD approach and framework, the IDEA method and the motivation(s) for pursuing sustainability.

- Each phase builds on the prior phase and subsequent work is checked against the outcomes of earlier phases. Participants are encouraged to answer each question as thoroughly as possible.
- The intents, steps and goals for each phase should be discussed, detailed and documented prior to beginning work.
- There is no particular selection process to decide who should be involved in the project.
- The use of consensus agreements in all phases is encouraged. Consensus is NOT the same as unanimity, but a general agreement among the members of a given group or community on the way to move forward together. Each individual exercises discretion in decision-making and follow-up action.
- Within NBD, economic capital (money) is considered to be a tool for supporting the project rather than an end to be achieved.
- The time to complete each phase will fully depend on the size and scope of the project and the needs of the community.
- Have all individuals involved in the project had the opportunity to learn, discuss and understand the concepts of basic human needs and NBD? Do they have access to the resources they need to understand it?
- Have the concepts of *backcasting* from Sustainability Principles, *meaningful participation* and the use of the three *prioritising guidelines* been used throughout the process?
- How can we ensure, to our utmost ability, that the project has followed the guideline of 'meaningful participation'?
  - Has an open, appropriate, and general invitation to participate in the process been made when appropriate?
  - Have the 'right' key people been invited to the conversation? These are the people that provide valuable knowledge and insight, also referred to as the Firesouls of the community. They might also include those who have been connected to the project 'place' for generations. Have at least 'two degrees of separation' have been used to identify these individuals? Have those already engaged in the process been asked if they are aware of any other individuals who might provide yet more insight to the process?
- Have collaborations with government, business and/or NGOs emerged from the project?
- Have the participants had a chance to discuss and explore the future of their community and their role within it?
- Are the actions taken in each step contributing to efforts that allow individuals to positively participate in their communities?

# Intend

## What do we intend to create?

### Guide questions:

- What purpose is your project trying to fulfil? Is this project even necessary? How can the needs that it is aiming to serve best be fulfilled?
- Who will be recruited to create the best team to support in the creation of this project?
- Have detailed governing and process documents been created for this project to structure and support the desired intents and outcomes?

### Inputs:

#### Needs Based Design approach

Explore the intricacies of this and other theories and approaches to discover what will work well for you and the project team in order to pursue your community's vision.

#### A desire to continuously learn together

NBD encourages a new way to think, work and act. Constant team learning and flexibility from its participants will allow the team to work best together.

#### A desire to move towards, and beyond, sustainability.

What are the ways we can support a healthy and vibrant society where people can continuously meet their own needs?

#### Participants

- Leadership team (owner's, project manager, council...)
- Core team (core design teams, general contractor(s), government leaders and regulators)
- Facilitator(s) and/or consultants familiar with NBD

#### Understanding of the regional context:

- The region's vision or master plan
- Building codes and regulations
- Key influential actors in government – those that can help to build momentum in support of the project

## Outputs:

### Statement of intent

This is a mission statement for the project based on the needs it is proposing to fulfil. It should be rigorous enough to withstand the test of time. Note that this is NOT a project program or list of design elements, but a statement of what the project team intends to create together.

### Documentation of the Intend phase

- Governing and process documents – these address how the remainder of IDEA will unfold.
- Communication documents – the document should suggest how participants will communicate with one another to encourage the flourishing of all possibilities throughout IDEA.

## Tools and Resources:

### 'Big picture' sustainability inspiration + systems thinking theory:

- The Natural Step ([www.naturalstep.org](http://www.naturalstep.org))
- Ishmael (Daniel Quinn 1992)
- The Fifth Discipline (Peter Senge 1990)
- Barth's Moral Theology: Human Action in Barth's Thought (John Webster 2004)
- The Nature of Order (Christopher Alexander 2002)
- Natural Capitalism (Paul Hawken, Amory & Hunter Lovins 1999)
- Biomimicry (Janine Benyus 1997)
- Permaculture (Bill Mollison 1988)
- Human Scale Development (Manfred Max-Neef 1991)

### Progressive design and planning theory:

- Regenerative development ([www.regenesis.com](http://www.regenesis.com))
- Cradle to Cradle (Michael Braungart & William McDonough 2002)
- The Natural Step for Communities (Sarah James & Torbjörn Lahti 2004)
- SuN Living (Wil Mayhew & Elisa Campbell 2008)
- Ecological Design (Sim van der Ryn & Stuart Cowan 1995)
- The Nature of Design: Ecology, Culture, and Human Intention (David Orr 2002)
- Design with Nature (Ian McHarg 1971)

### Dialogue and team learning:

- Team roles and Team learning workshops
- Myers-Briggs Type Indicator (MBTI)
- The Fifth Discipline Fieldbook: Chapters 52 to 67 – Team Learning ( pages 351 to 441) (Peter Senge 1994)
- Field Guide to Consulting and Organizational Development – A collaborative and systems approach (Carter McNamara 1997)

# Discover needs + place

## What allows life to flourish within us and within this community?

### Guide notes + questions:

Very little attention is paid to the actual project itself at this stage. Focus is given to the place in which the project will participate, and the needs of the participants and the wider community. Current satisfiers to those needs can also be discussed.

- Has an open invitation for participation been made to the community?
- Have key community members been approached with an invitation to participate, particularly those who may not come forward on their own accord?
- How diverse are the backgrounds of the individuals helping to inform an understanding of needs and place? Which groups are currently under-represented in the community? How can they become more involved?
- Which community groups and individuals could help to collect information about the place? (E.g. residents from neighbouring communities, dog walkers club etc.)
- What are the unique qualities of this place that resonate with people historically, now and potentially in the future?
- Have all historical, environmental, cultural, social, economic and governance contexts been considered?
- How broad and multi-faceted is the information compiled to inform the project, process, site inventory and survey?
- How is all of this information best presented to the community?
- What community activities can be initiated to highlight 'the place' and gather momentum behind the project?

### Inputs:

#### All information gained from the Intend phase

#### Participants

All who would like to be involved in the project.  
Community leaders and firesouls are actively sought

out. Broad community engagement is invited, including participation from NGOs, businesses and government.

#### Personal reflection and mastery, and time to explore self.

By continually clarifying and deepening personal visions, focusing energies, developing patience and seeing reality objectively, all participants can develop the personal mastery that will enrich the process and the foundation of their community.

#### Data

Lots and lots of information about the community at large to gain a pattern understanding of how life thrives there. Data includes as much information as possible collected from numerous sources (e.g. environmental groups, regional parks, museums etc.), and covers all relevant contexts (ecological, cultural and historical, social, economical, community governance, other).

### Outputs:

#### A story of place and meaning

A thorough understanding of needs and place based on all input from all participants – The 'what' and 'who' or essence of the place is understood and communicated to all interested.

#### Sense of community and trust

This should be fostered throughout IDEA encouraging engagement and success.

#### Documentation of the Discover phase

### Tools and Resources:

#### Understanding place:

- A Pattern Language: Towns, Buildings, Construction (Christopher Alexander 1977)
- Patterning as Process (Tim Murphy and Vicki Marvick 1998)
- The Experience of Place (Tony Hiss 1990)

#### Dialogue and team learning tools:

- Participation Works: 21 techniques of community participation for the 21st century (The New Economics Foundation with members of the UK Community Participation Network 1998)

#### Strategies:

- Kitchen table conversations and one-to-one interviews
- Story telling
- A methodology to understand Basic Human Needs: Human Scale Development (pages 39 to 42) (Manfred Max-Neef 1991)
- Visit to the project site by phase participants
- Strengths, Weaknesses, Opportunities + Threats (SWOT) analysis

# Envision

What will we create to contribute to the flourishing of life in this place?

## Guide notes + questions:

A vision is co-created based on the intent of the project, a thorough understanding of 'needs' and 'place', and is framed within the minimal constraints of the Sustainability Principles.

- Has an open invitation for participation been made to the community?
- Have key community members been approached with an invitation to participate, particularly those who may not come forward on their own accord?
- What is the regional vision, if one exists? Has it been taken into consideration and built upon for this specific project?
- How does the project vision relate to the understanding of 'needs' and 'place'?
- Is it broad in both space and time?
- Do participants relate to the vision? Is there consensus?
- What is the project's vision, core purpose, core values and strategic goals?
- Does the vision reflect the long-term interests of the community?
- How can the shared vision best be communicated?

## Inputs:

### All information gained from the Intend and Discover phases Participants

All who would like to be involved in the project. Community leaders and firesouls are actively sought out. Broad community engagement is invited, including participation from NGOs, businesses and government.

### Regional vision

The regional vision or master plan is something to consider as necessary. Where master plans don't yet push into the realm of sustainability, creative project innovation

is encouraged. Including government officials in the process might encourage easier adoption of innovative thought into existing policies and regulations.

## Outputs:

### A vision for the project based on consensus agreement

- Informed and constrained by the Sustainability Principles
- Consists of a core ideology, an envisioned future, and strategic goals

### Documentation of the Envision phase

Sustainability Principles inform and constrain

### Vision of a successful future

Core ideology  
Envisioned future  
Strategic goals

## Tools and resources:

### Co-creating a vision:

- The Fifth Discipline Fieldbook: Chapters 44 to 51 – Shared Vision (pages 297 to 347) (Peter Senge 1994)
- 'Enspirited Envisioning' and 'Guided Visualisation' in Participation Works: 21 techniques of community participation for the 21st century (The New Economics Foundation with members of the UK Community Participation Network 1998)
- Future search ([www.futuresearch.net](http://www.futuresearch.net))
- Building Your Company's Vision (James Collins & Jerry Porras 1996)
- Natural Step ABCD process ([www.naturalstep.org](http://www.naturalstep.org))

### Strategies:

- Open Space for Dialogue and Enquiry ([www.osdemethodology.org.uk](http://www.osdemethodology.org.uk))
- World café (Juanita Brown & David Isaacs 2005)
- Visit to the project site by phase participants to re-emphasise the importance of 'place.'
- Storytelling
- One-to-one conversation
- Personal reflection

# Act

How can we fulfil the project's vision to allow people the opportunity to meet their needs both now and in the future?

## Guide notes + questions:

The design of the project itself now becomes the team's focus. The number of Design Phases (DPs) within the Act phase dictate the number of Community co-creation sessions that will be held.

- Has an open invitation for participation been made to the community?
- Have key community members been approached with an invitation to participate, particularly those who may not come forward on their own accord?
- Have teams from different participant groups exchanged meaningful dialogue about the project?
- How best can we make the expertise of the design teams available to support the co-creation of design solutions?
- Has cross-disciplinary collaboration allowed for dialogue concerning suggestions and major decisions?
- How will the participants' insights and discussions from the Community co-creation sessions be effectively recorded and distributed to the project teams?
- Are the actions chosen in each DP strategically based on backcasting from the Sustainability Principles and the three prioritisation guidelines of the NBD framework?
- How can we best support the design team in their efforts to fully integrate their work with that of other design teams?
- How can we best foster communication between the design teams and all other participants?
- Have the intent and goals of the each DP been fulfilled in accordance with the project's vision, before moving onto the next DP?
- Has a final public review, after all DPs have been completed, been held to demonstrate the project's compliance with the intent, understanding of needs and place and vision?

## Inputs:

**All information gained from the Intend, Discover and Envision phases**

### An anticipated number of DPs

The Act phase consists of numerous DPs, the number of which are dependant on the size and complexity of the project. A best-estimate of the number of DPs necessary to satisfy the requirements of the project are decided upon by the core team.

**All information gained from the previous DP(s)**

### Participants

All who would like to be involved in the project. Community leaders and firesouls are actively sought out. Broad community engagement is invited, including participation from NGOs, businesses and government.

## Outputs:

### Documentation of the DP

- A summary document of ideas and efforts, project plans and themes from the DP
- Documentation of the entire Act phase

### IDEA Documentation

- A final IDEA document and plan
- A document with all information from the IDEA method. It will be referred back to for all future steps of the project, and acts as the reference manual upon which all future decisions are made.

## Tools + Resources:

### The Integrated Design Process and charrettes:

- Integrated Project Delivery: A Guide (AIA 2007)
- ABCD Co-creation Session – Planning for Sustainability: A Natural Step by Step Guide by The Natural Step (unpublished)
- The Charrette Handbook: An Essential Guide to Accelerated, Collaborative Community Planning (Bill Lennertz & Aarin Lutzenhiser 2006)
- Design Charrettes for Sustainable Communities (Patrick Condon 2008)
- SuN Living. Developing Neighbourhoods with a One Planet Footprint (Wil Mayhew & Elisa Campbell 2008)

### Community outreach and action:

- Resources on sustainable living: Community Based Social Marketing Manual (Doug McKenzie-Mohr 1999)

# a people process

*"It's a truism that people will support what they help create, and the converse is also true. People will often oppose that which is seen to be imposed upon them."*

– Alex Zimmerman, President, Applied Green Consulting

Within the IDEA method, all those who would like to be involved in the project are invited and encouraged to contribute. This may seem incredibly daunting at first, and for good reason - there is often a lot of opposition to development, and change in general. People don't mind changing, but they usually resist any change that they perceive as forced upon them. Furthermore, whatever the experience, getting the most out of a public participation process is a difficult and delicate task, but one that can be quite beneficial when directed by an experienced facilitation.

First, involving people to co-create a vision of what their community will become is essential in making it a reality. The project will benefit from individual's unique understanding of the way their community operates and meaningful participation affords community members the opportunity to define how they will meet their own needs in years to come. As Alex Zimmerman notes, this can also foster positive support for efforts, as people have an avenue to contribute their own ideals and ideas to the project.

To get the most out of these efforts, participation processes should address both 'involvement' and 'inclusiveness'. Involvement highlights the active role that all participants can take and indicates the importance of making a genuine, open and broad invitation to encourage their participation. Inclusiveness then takes into account the needs of others, regardless of their presence or absence in the process to maintain a discussion that takes into account those unable to be included in the process such as the unknown future residents of a community and future generations to come.

## The positives of participation

Full and meaningful participation allows for the following to occur

- The 'big picture' of sustainability can be presented at a broad scale.
- Providing an understanding of the intent and decision-making process can reduce potential adversity to the project.
- It promotes unity and allows vast amounts of knowledge within the community to be accessed.
- A higher quality of life is achieved when people have a stronger bond to their community and the decisions that shape it.
- Partnerships with key community leaders are promoted.
- Participation encourages team learning that, in the past, has been found to encourage communities in a successful transition towards sustainability
- Participation within the process has great potential to inspire behaviour change towards more sustainable actions by its residents, a necessity for communities to function in sustainable manners.

## Yes, AND...

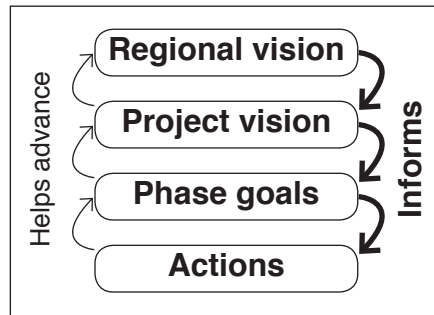
It is equally important to note that any project pursuing broad participation in the process will require skilled facilitation, structured dialogue and active listening. Past experience recognises that general participation can 'open the floodgates' of general discontent and frustration that allow personal agendas to fill the discussion rather than a conversation about the common good. NIMBY and NOTE advocacy ('Not In My Backyard' and 'Note Over There Either') must be overcome by centering the conversation similarities and universal needs rather than personal differences.

# regional context

*“We’re trying to get away from saying: ‘let’s have a sustainable city’ and wondering what that is. We’re saying: ‘what would the experience of that be?’ ‘What would my everyday relationships be with my family, with my neighbors?’ And then start working back and saying ‘and what do you need to get that?’ ”*

*- Kay Saville-Smith, Research Director, Centre for Research Evaluation and Social Analysis (CRESA)*

A project’s connection to regional sustainability efforts is necessary and natural. By aligning approaches and visions between projects and regional efforts, the chances of overall success increase significantly. Efforts at the regional level can guide sound decision-making while an inclusive project-level process can help spur sustainability at the regional level. As more projects are completed with Needs Based Design, its shared language and approach will become more common and widely understood, making it easier to work together on regional sustainability efforts.



# the role of government

*“Let us [the development community] solve the problem in a creative way. We will find ways to be creative.”*

*– John Startt, President, JST Builders*

The mandate and responsibility for setting and maintaining community plans and building standards is often held at the regional municipality level. Government officials have great sway over the approaches taken by project teams and the decision-making of those teams, in terms of strategy, scheduling and steps to be implemented. Needs Based Design challenges government to reassess the rules, processes and regulations currently used to regulate the development process.

Currently, government codes and regulations usually only focus on the minimum standards that projects must achieve and often set strict rules on what measures may or may not be implemented. By doing so, they often discourage innovation and creativity that could help in society’s transition towards sustainability. The project approval process can be a long and cumbersome for both government and developers. Developers who ‘break the rules’ are currently treated in the same way regardless of whether their intent is positive or negative.

Calls for finding a way around these roadblocks are common – in his quote above, John Startt spoke directly of allowing progressive members of the development industry to take on the challenges of sustainable development in more creative ways. Needs Based Design supports this viewpoint and encourages government to reconsider their relationship with the development community by enacting policies that support and encourage the maximum potential of projects within their communities.

# moving forward...

There it is – an approach, a framework and a method to help you initiate the process and add to the discussion of how to pursue sustainability together.

Needs Based Design does not hold answers or solutions - those are for you to find. What it does do is to ask the right questions and provide guidance for a better way to design and plan urban developments.

Needs based design provides us with a way to move forward by:

- Addressing three big gaps that are currently absent in conventional and green design and planning processes: it uses systems thinking, provides a way to deal with complex social issues, and uses a structured and robust framework.
- Encouraging co-learning and shared visioning in the co-creation of sustainable communities.
- Provides a new way to address sustainability in the building and maintenance of our human habitats.

We hope this introduction guide has helped to bring a new perspective to your project.

Ultimately the aim of the game is to strategically move society towards sustainability as quickly and effectively as possible. We look forward to co-creating projects with you to meet this challenge to create healthy and vibrant communities!

**Cheers and good luck!**

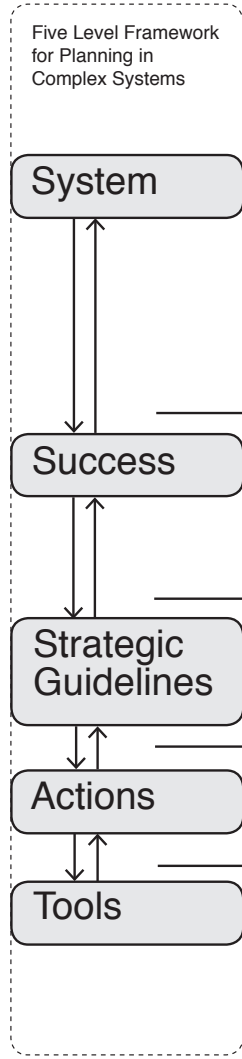
## More information...

**The next pages contain more detailed information on:**

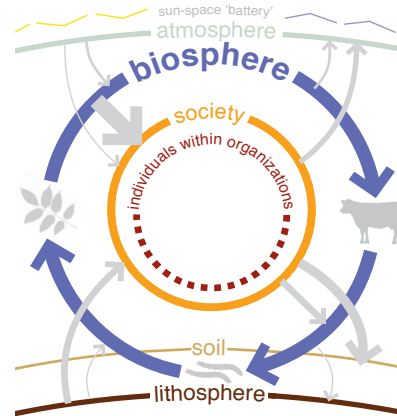
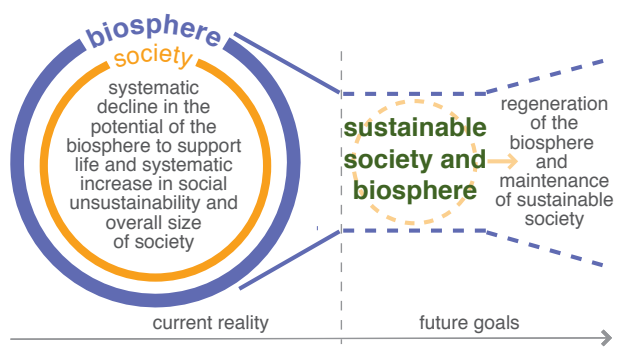
- The Framework for Strategic Sustainable Development
- How to apply the FSSD Sustainability Principles to urban design projects
- General information about a possible structure for the 'Community co-creation sessions' in the Act phase, based on the ABCD method used with the FSSD
- A little bit about the authors and the Masters in Strategic Leadership towards Sustainability programme at Blekinge Tekniska Högskola
- Added references to help you on your way

# Framework for Strategic Sustainable Development (FSSD)

Applying the *Five Level Framework for Planning in Complex Systems* to achieve and maintain a sustainable society



## Society within the Biosphere: 'Funnel' Metaphor



## Individual Human Needs<sup>1</sup>

- Subsistence
- Protection
- Affection
- Idleness
- Identity
- Freedom
- Creativity
- Participation
- Understanding



An understanding of the dynamic interrelationships within and between systems is based on study of ecology, thermodynamics, biogeochemical cycles, social institutions and basic human needs.

## In a sustainable society, nature is not subject to **systematically increasing**:

1. concentrations of substances extracted from the Earth's crust,
2. concentrations of substances produced by society,
3. degradation by physical means,<sup>2</sup>

## and, in that society:

4. people are not subject to conditions that systematically undermine their capacity to meet their needs.<sup>3</sup>

**Sustainability Principles**

Each individual organization may develop and add its own principles of success based on the minimum constraints of the Sustainability Principles

## Backcasting<sup>4</sup>

A planning procedure by which a successful outcome is imagined in the future, followed by the question: "what do we need to do today to reach the successful outcome?"

## Strategic guidelines for prioritizing actions

Actions are prioritized by searching for measures that:

1. proceed in the **right direction** with respect to all four sustainability principles
2. function as a stepping-stone (i.e. **flexible platform**) for future improvements
3. are likely to produce a sufficient **return on financial, cultural and political investment** to further catalyze the process

## Concrete steps based on strategic guidelines

Each organization must choose and consistently evaluate its actions in the context of the strategic guidelines its definition of success.

## Other tools, as appropriate\*, for example:

- |                     |                         |            |
|---------------------|-------------------------|------------|
| Life Cycle Analysis | Ecological Footprinting | CSR        |
| ISO Standards       | LEED® Rating Systems    | Factor 'X' |
| Cradle to Cradle    | Happiness Index         | Fair Trade |

\*Selection of tools should be informed by the outcome of the ABCD process to ensure they are appropriate to the organization and the specific planning endeavor

## ABCD Planning Methodology:

- A**wareness of FSSD and the motivation for pursuing sustainability
- B**aseline: An assessment listing all current assets and problems
- C**lear & Constructive Visioning: Solutions and visions for tomorrow
- D**own to Action: Actions evaluated using the strategic guidelines.

### References

Graphic: Geoffrey Stack, MSLS'08

<sup>1</sup> Max-Neef, M. 1991. *Human Scale Development: Conceptions, Applications and Further Reflections*. London: The Apex Press.  
<sup>2</sup> Broman, G., Holmberg, J., and Robèrt, K.-H. 2000. "Simplicity Without Reduction - Thinking Upstream Towards the Sustainable Society." *Interfaces: International Journal of the Institute for Operations Research and the Management Sciences* 30, no. 3.  
<sup>3</sup> Ny, H. et al. 2006. "Sustainability Constraints as System Boundaries: An Approach to Making Life-Cycle Management Strategic." *Journal of Industrial Ecology* 10, no. 1-2: 61-77.  
<sup>4</sup> Holmberg, J. and Robèrt, K.-H. 2000. "Backcasting from non-overlapping sustainability principles – a framework for strategic planning." *International Journal of Sustainable Development and World Ecology* 7: 291-308.

# what do the sps mean?

**SP 4: In a sustainable society people are not subject to conditions that systematically undermine their capacity to meet their needs.**

## How is this principle considered?

- Encompasses the basic human needs of people both now and in the future
- Recognises that in a sustainable society barriers have been removed to allow people the opportunity to meet their needs

## How is this principle applied?

- An understanding of the concept of basic human needs and a willingness to remove barriers to their fulfilment exists
- Developers and consumers select and design satisfiers that provide the opportunity to fulfil multiple needs, potentially reducing the consumption of unneeded materials and goods. Behaviour patterns to reflect more sustainable actions are encouraged
- Have the needs of the designers and participants within the process been recognised and designed for?
- Has the design of the project taken into consideration the needs of the residents, both known and unknown?
- Are the needs (specifically participation, understanding and identity) of the participants being met within the design and planning process?
- Have barriers to the fulfilment of these needs been removed?

## Who should this principle be applied with?

- Process participants
- The living community
- The community at large
- Global residents

**SP 3: In a sustainable society, nature is not subject to systematically increasing degradation by physical means.**

## How is this principle considered?

- Encompasses degradation to landscapes via pollution or over-exploitation of resources (forests, grasslands, water etc.)
- Recognises that continued degradation is not possible in a sustainable society

## How is this principle applied?

- Is the project needed to fulfil its intended purpose?
- Are there ways to fulfil the needs of the project without development?
- Can density be increased within an existing development, reducing development on virgin lands?
- Is the project participating positively with 'place' within the biosphere, recognising its dependence on natural systems, and contributing to that place's ecological, social, cultural and historical wealth?
- Where do our selected materials come from? Where does our waste go?
- Does resource use by our project contribute to over-harvesting of non-renewable resources?

## What functions should this principle be applied to?

- Site selection – increasing density versus continued sprawl, recognising the project's ability to positively participate within the selected site
- Resource sources – water, wood, rock, other
- Material selection and disposal – possibility of closed loop systems to re-use and minimise landfill disposal, effluents and emissions

**SP 2: In a sustainable society, nature is not subject to systematically increasing concentrations of substances produced by society.**

#### **How is this principle considered?**

- Encompasses all human-made substances (plastics, complex molecules...) that are foreign to nature and those naturally-occurring substances whose flows are altered through man-made intervention (methane from landfills)
- Recognises that their continual release and accumulation into natural systems is not possible in a sustainable society
- Recognises that human-made substances often emit pollutants during their production and use that are foreign to nature, and can persist as a result of their inability to breakdown readily in natural systems.

#### **How is this principle be applied to?**

- Have options to re-use and recycle materials been considered?
- Are we using materials efficiently in products and processes where substances can be recaptured and re-used rather than releasing them and allowing them to accumulate in nature?
- Are we supporting the ability to keep substances in closed loop systems, therefore minimising the need for continued production from virgin resources?
- Can alternative materials be used that pollute less or breakdown more readily in nature?
- What options exist to dispose of these materials? How efficiently do the selected materials breakdown when disposed of if not kept in closed loops?

#### **What functions should this principle be applied to?**

- Material selection – buildings, project or community infrastructure and all necessary materials (chemicals, glues, paints...)
- Options to procure organic, sustainable products by the developers and eventual residents of the community

**SP 1: In a sustainable society, nature is not subject to systematically increasing concentrations of substances extracted from the Earth's crust.**

#### **How is the principle considered?**

- Encompasses all mined materials and substances (metals, fossil fuels, natural gas...)
- Recognises that their continual accumulation in the biosphere through continual extraction is not possible in a sustainable society
- Recognises that materials used from the earth's crust must be used in ways that prevents their accumulation in natural systems

#### **How is this principle applied?**

- Have options to re-use and recycle materials been considered?
- Are we using materials efficiently and in products and processes where they can be recaptured and re-used, rather than releasing them into the atmosphere, water and soil?
- Are we contributing to keeping materials in closed loop systems, therefore minimising the need for virgin extraction?
- Are there alternative substances that can be used that are less harmful to the biosphere? Can substances that are naturally more prolific be used, therefore allowing the biosphere to better assimilate them, for example aluminium instead of copper?

#### **What functions should this principle be applied to?**

- Material selection – buildings, project or community infrastructure
- Energy selection – renewable versus non-renewable sources of energy used for both the building process and the community once occupied (transportation, heating, electricity...)

# co-creation session?

The Community Co-creation Session provides a way to include all participants in the strategic planning of their community.

The session is coordinated into four parts. Time is taken as needed to go through the session in the most effective way. A day to go through each step might very well be necessary. Remember, these co-creation sessions take place within the Act phase of IDEA, beginning after the project's vision has been co-created.

## **Awareness: NBD + the motivation for pursuing sustainability**

- To share the ideas and intents behind Needs Based Design in relation to the project with the participants.
- There are three components that need to be communicated and understood within this first step:
  - Sustainability and the motivation for pursuing it.
  - Needs Based Design – the Needs Based Design approach, framework, and IDEA method are described to all participants. Everything from the Intend, Discovery, and Envision phases are shared with the participants. A shared understanding and definition of sustainability, and what 'success' means in relation to the project's vision are established.
  - Community co-creation session – the way the remainder of the session will be carried out is communicated, as are the aims, components and desired outcomes for each step.

## **Baseline: An assessment listing all current assets + problems**

- To identify potential strengths and weaknesses within the project's scope that could help or hinder society's transition towards sustainability.
- To identify potential opportunities and threats in the greater system that could help or hinder society's transition towards sustainability.
- To identify potential barriers to the fulfilment of basic human needs.
- Understanding the baseline is the first essential step of backcasting and includes two components:
  - Participants consider and recognise potential operations that might occur within the project

and the dependant systems, and scrutinise them against the sustainability principles; and

- Participants voice barriers that act to inhibit the fulfilment of their basic human needs.

## **Clear & Constructive Visioning: Solutions + visions**

- To have participants contribute and share ideas and solutions to all issues brought up in the Baseline step in a brainstorming session.
- The visioning step is the second essential element of backcasting:
  - Participants are encouraged to brainstorm creative solutions to respond to the Baseline step, and asking the question: "what do we need to do today to reach a successful outcome?"
  - All solutions must comply with the project vision. Creativity within the minimal constraints of the sustainability principles is encouraged.

## **Down to Action: Actions evaluated using the strategic guidelines**

- To discuss ideas and solutions and prioritise them according to the prioritising guidelines of Needs Based Design.
- To sort ideas and solutions into an action plan that can inform the building of a sustainable community.
- The Down to Action step allows solutions identified during the Clear & Constructive Visioning step to be strategically prioritised. Answering the following questions will provide guidance and help understand how solutions might build upon one another.
  - Does this measure proceed in the right direction with respect to the vision and therefore all Sustainability Principles?
  - Does this measure provide a stepping-stone (i.e. 'flexible platform') for future improvements towards sustainability?
  - Is this measure likely to produce a sufficient return on investment to further catalyse the process, including ecological, social and economic returns?

# about the authors

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Natalie Haltrich is a certified guide with the Sea Kayak Guides Alliance of British Columbia, a graduate of Advanced Wilderness Leadership from Capilano College in British Columbia, and holds a Bachelor's degree in Biology and Environmental Studies from McGill University in Montreal. Her inspiration for sustainability stems from a passion of people and places, and a recognition that both can live in harmony within the finite provisions of this planet. She is compelled by a desire to actively and artfully enjoy the better things in life, and welcomes all on her journey.

## Ella Lawton LLB BSc GCAS



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Ella Lawton's upbringing on a small farm in South Auckland, Aotearoa created the foundation for her passion for the environment and appreciation of society's place within natural systems. Ella has a Bachelor's of Science in Ecology and a Bachelor's of Law from Otago University, Dunedin. She has also spent time studying and researching in Canada, Finland, Sweden and Antarctica. Upon return to New Zealand Ella hopes put her theoretical knowledge to practical use, through involvement in regional development projects and sustainability networking and education.

## Geoffrey Stack BLA LEED®AP



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Geoff Stack combines his experience in design, education and ecology to co-create ways to invite, integrate and inspire a move towards sustainability. With a Bachelor of Landscape Architecture degree from the University of Maryland, Geoff has worked on plans for public open space, university campus and urban redevelopment projects. He is a Leadership in Energy and Environmental Design Accredited Professional and looks forward to exploring further how to create human infrastructure that functions in partnership with the natural life support systems of the planet.

# about the msls program



## Master's Programme in Strategic Leadership towards Sustainability (MSLS)

### The challenge

The results of unsustainable human development are evident worldwide — climate change, species extinction, pollution, poverty, and inequality are deteriorating our capacity to sustain our ways of life. Our society needs more effective ways of using our skills and resources to create positive change. This is the challenge that our graduates are prepared to meet.

### Description of the programme

The programme is founded on the basic premise that a 'whole-system', transdisciplinary approach is needed to deal with the sustainability challenge of meeting our society's needs today and into the future. The programme is delivered in a non-traditional educational setting with experiential and holistic learning methods. Two integrated streams are the focus:

- 1) a framework for strategic sustainable development; and
- 2) organisational learning and leadership required for sustainability decision-making.

### A participant will gain

- The scientific foundation and the practical skills for strategic planning towards a sustainable society;
- Experiential learning from one of the leading nations in sustainability practice *Sweden*;
- Interaction with peers from diverse nationalities and professional backgrounds;
- Graduation into an active alumni network; and
- Career paths as sustainability practitioners in business, academia, government, and community organisations.

### Programme specifics

- The programme is for early to mid career professionals from any nation.
- Preference is given to degrees related to natural science, engineering, business or the environment.
- Applications are open from December 1st to February 1st for international students, and from March 15th to April 15th for Swedish students.
- The programme runs for one academic year from late August to June.
- Entry is competitive to ensure a high quality learning environment.
- Tuition is fully sponsored by the Swedish government.
- The programme is taught (and therefore requires proficiency) in English.

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