

**Integrated Practice of
Jacobs Value Plus and Sustainability Plus –
*A new paradigm in project management
for enhancing holistic value.***

**Canadian Value
Symposium
Toronto
Nov 17-18**

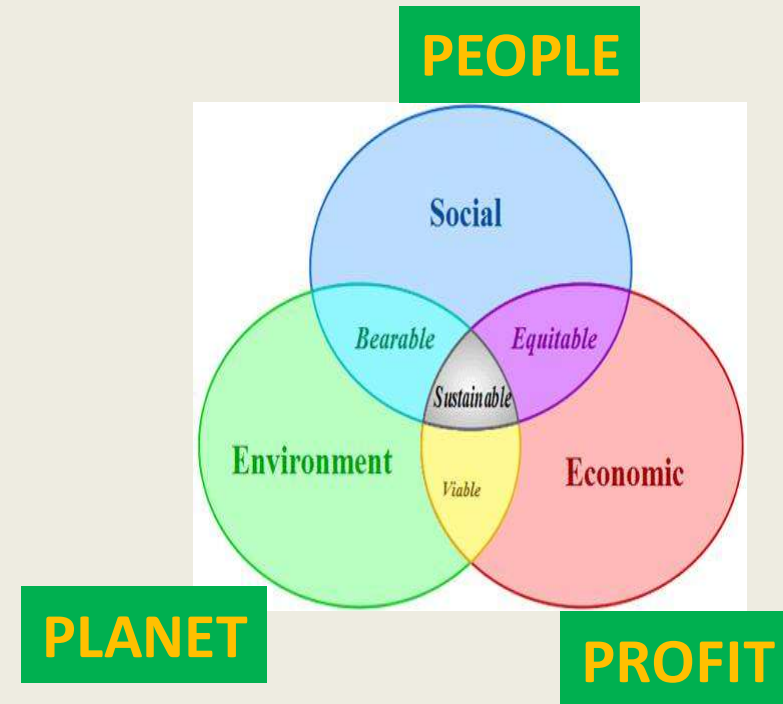
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JACOBS

Integrated Practice of Jacobs Value Plus and Sustainability Plus – *A new paradigm in project management for enhancing holistic value*

Topics of Discussion

- Jacobs – Corporate Profile
- Growing Trends in Business
- Sustainability Principles – *Triple Bottom Line*
- Value Principles
- Integration of Value & Sustainability Principles
- Sustainable Value Means Better Business
- Linear Economy vs. Circular Economy
- Value by Design Strategies
- Projects, Success Stories
- Understanding Carbon Footprints
- Appraisal of Sustainable Values
- Integrated Practice of Jacobs Value Plus and Sustainability Plus
- Critical Success Factors & Concluding Remarks





- multinational engineering company

Global Locations

200+ locations

25+ countries

North America, South America, Europe, the Middle East, India, Australia, Africa, and Asia.



Founded in 1947

of Employees: 80,000+

Annual Revenue: \$12 Billion





2014 SUSTAINABILITY REPORT

We See Sustainability Differently

BY THE NUMBERS

SERVICES

LEED-ACCREDITED PROFESSIONALS BREEAM/CEEQUAL PROFESSIONALS ESTIDAMMA CERTIFIED PROFESSIONALS

621 (At publication) 16 (At publication) 5 (At publication)

GREEN GLOBE-ACCREDITED PROFESSIONALS GREEN STAR PROIASSOC

8 (At publication) 19 (At publication)

REVENUE FROM SUSTAINABLE PROJECTS
FY2013 Revenue from LEED Registered/Certified, BREEAM Certified, Estidama Certified

\$165.1 million

(Revenue is for full services, including sustainable services, provided for clients' qualifying projects)

JacobsValue+™
\$6 billion
For FY2013

CLIENT SATISFACTION SURVEY SCORES FOR 2013
higher than 91%

4.3 million
METRIC TONS OF CARBON SAVED FOR OUR CLIENTS THROUGH JACOBS SUSTAINABILITY+ IN 2013

INTERNAL

PAGES OF PAPER SAVED THROUGH OUR PRINT REDUCTION PROGRAM

38.5 million

(Equivalent to 77,260 reams/214 tons/34,635 trees)

CHARITABLE DONATIONS MADE TO THE UNITED WAY, AMERICA'S CHARITIES & GLOBAL IMPACT

\$1.19 million

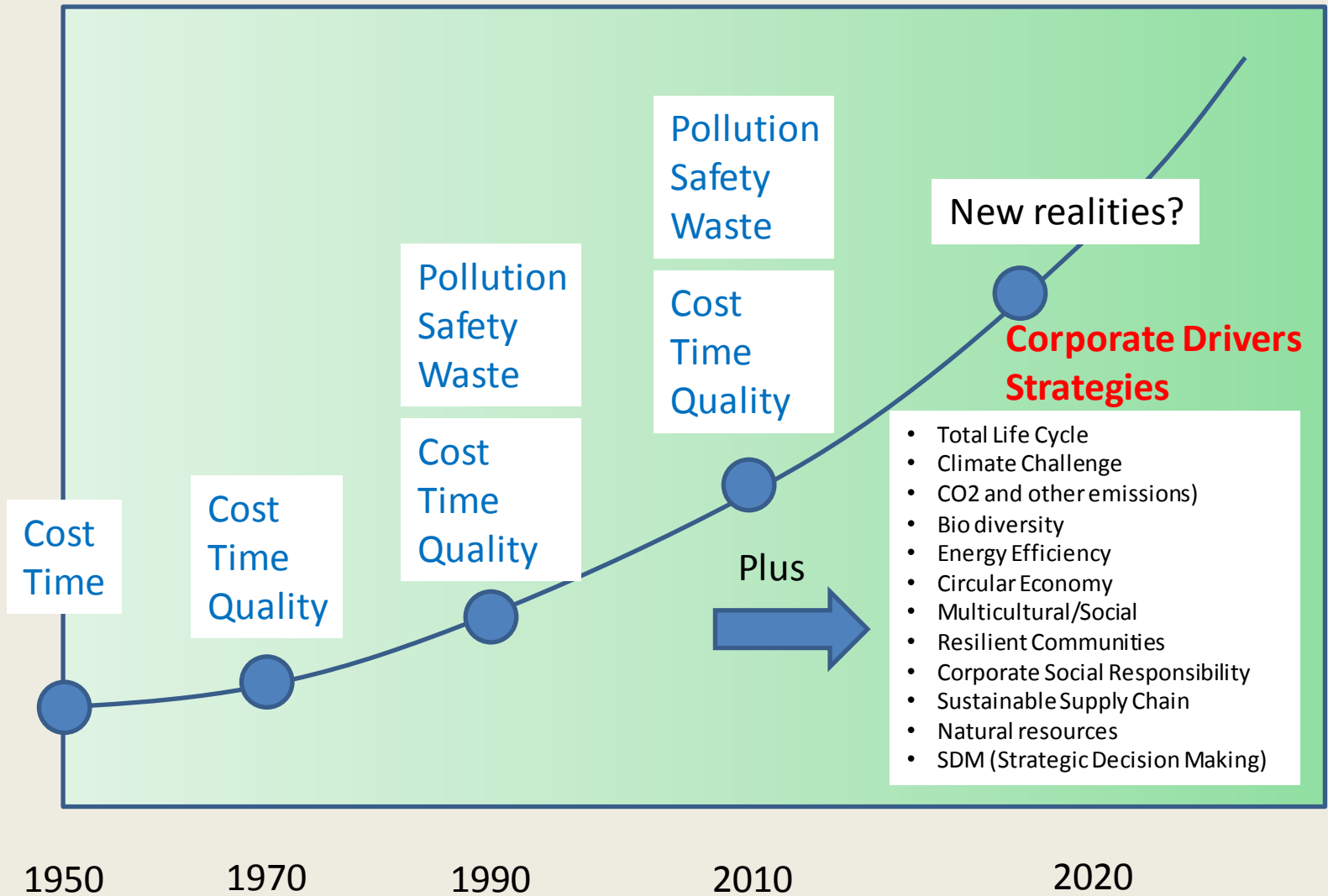
POWER REDUCTION WORLDWIDE DUE TO ENERGY SAVING MEASURES EMPLOYED ON MANAGED PRINT DEVICES

30%

RANKINGS

No. 2 FORTUNE MAGAZINE
Jacobs ranked No. 2 in the "Engineering & Construction" category of FORTUNE Magazine's 2014 World's Most Admired Companies.

Jacobs is one of the world's largest and most diverse providers of technical, professional, and construction services, including all aspects of architecture, engineering, and construction, operations and maintenance, as well as scientific and specialty consulting. We serve a broad range of companies and organizations, including industrial, commercial, and government clients across multiple markets and geographies. Our global network includes more than 200 offices in more than 25 countries, with operations in North America, South America, Europe, the Middle East, India, Australia, Africa, and Asia. We were founded in 1947, and our headquarters is in Pasadena, California.



→ Know your client

Growing trends /Business Drivers

From SKM

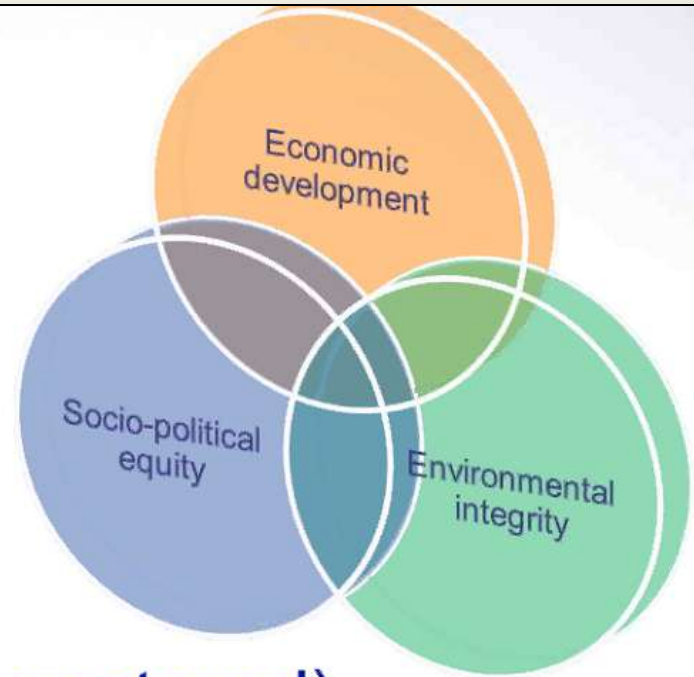


Impact of Value+: It Grows the Business!



Sustainability =

- ✓ Future generations
- ✓ Connectivity (people-centered)
- ✓ Livable, competitive cities
- ✓ Appropriate, technically sound technology



Sustainability and the Three Bottom Lines



- Corporations are accountable to people to take care of the **environment**, meet **community needs** and deliver excellent **financial results**
- Commitment to sustainability means balancing, tracking and measuring the corporate performance along **environmental, social** and **economic** bottom lines
- Value by Design is a holistic enhancement of the **environmental, social** and **financial** values

PEOPLE, PLANET & PROFIT

JACOBS

Jacobs Value Plus

The primary objective of the practice is to deliver, measure, and demonstrate value to our Clients by increasing the Client's return on investment.

Value+ Idea = A new or different idea, innovation or approach to add value to the project by a measurable benefit to the Client's return on investment. All Value+ ideas are reported in the Jacobs Value+ database.

Integrated Value and Creativity

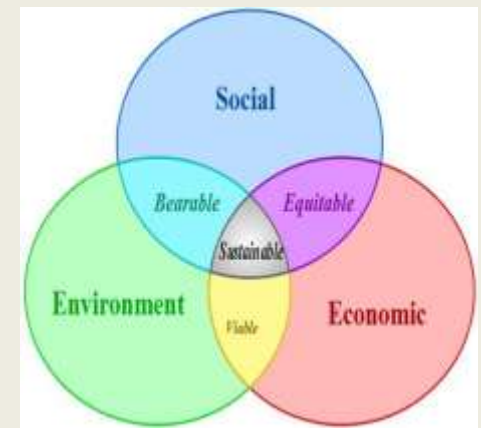
Value by Design combines the concepts of **Integrated Value** with **Creativity** in a group setting through facilitated brain steering.

- Low / optimum cost
- Sustainable development
- Corporate responsibility

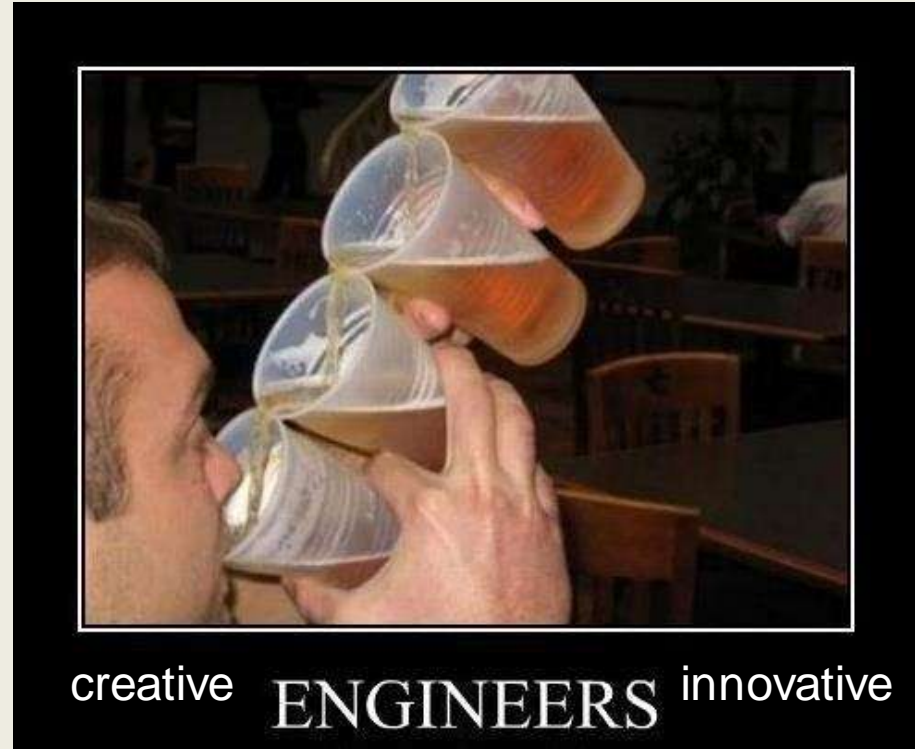
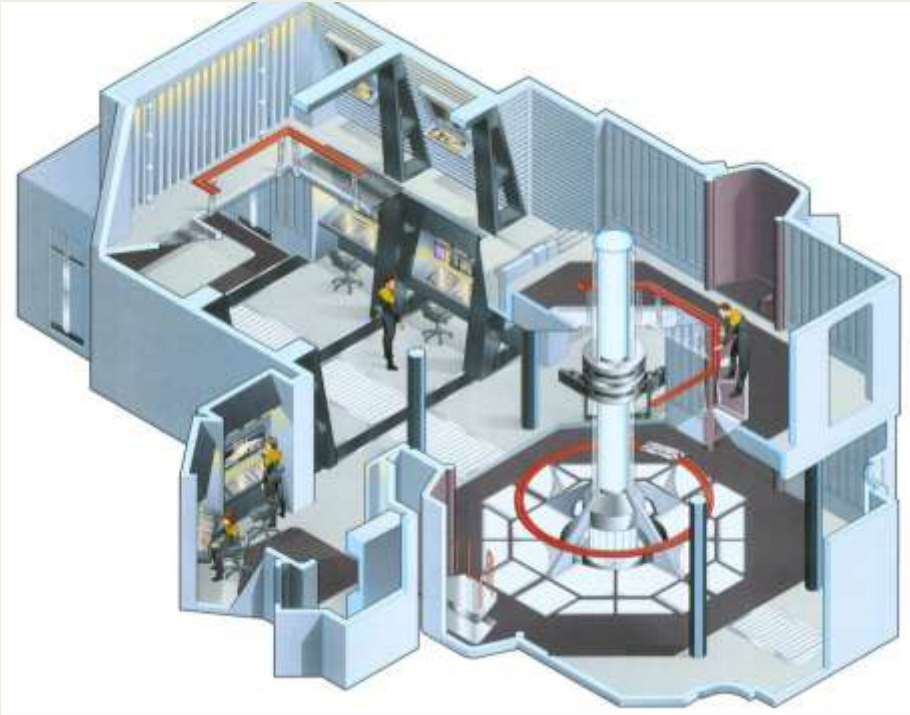
Optimum Value by Design is achieved when the necessary performance of a system is defined and delivered at the lowest life cycle cost by balancing the three bottom lines (integrated value):

- Lowest environmental impact
- Greatest social benefit
- Lowest financial cost

PEOPLE, PLANET & PROFIT



As project managers, we are great at doing
THINGS RIGHT.....



The **REAL** question is, *are we doing the*
RIGHT THINGS../?

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Ask the Right Questions

- Should anything ever be designed without sustainable values?
- Which risk factors should get priority?
- How far is enough?
 - Going beyond the design basis
 - Going global
- What are the appropriate risk metrics?
- What can be done to reduce fear?

What is value? – How do you create Value?

Best Value is not about cost cutting,

it is about improving the understanding of the business/project needs and delivering on them through creativity & innovation

'Namaste' & 'Howdy':

ISRO's Mangalyaan, NASA's Curiosity Rover greet each other on Mars..



**India's mission to Mars 23 Sept 2014
@ \$ 74 million**

11% cost of NASA's Maven (22 Sep 2014)

Less than the cost of making

'GRAVITY'

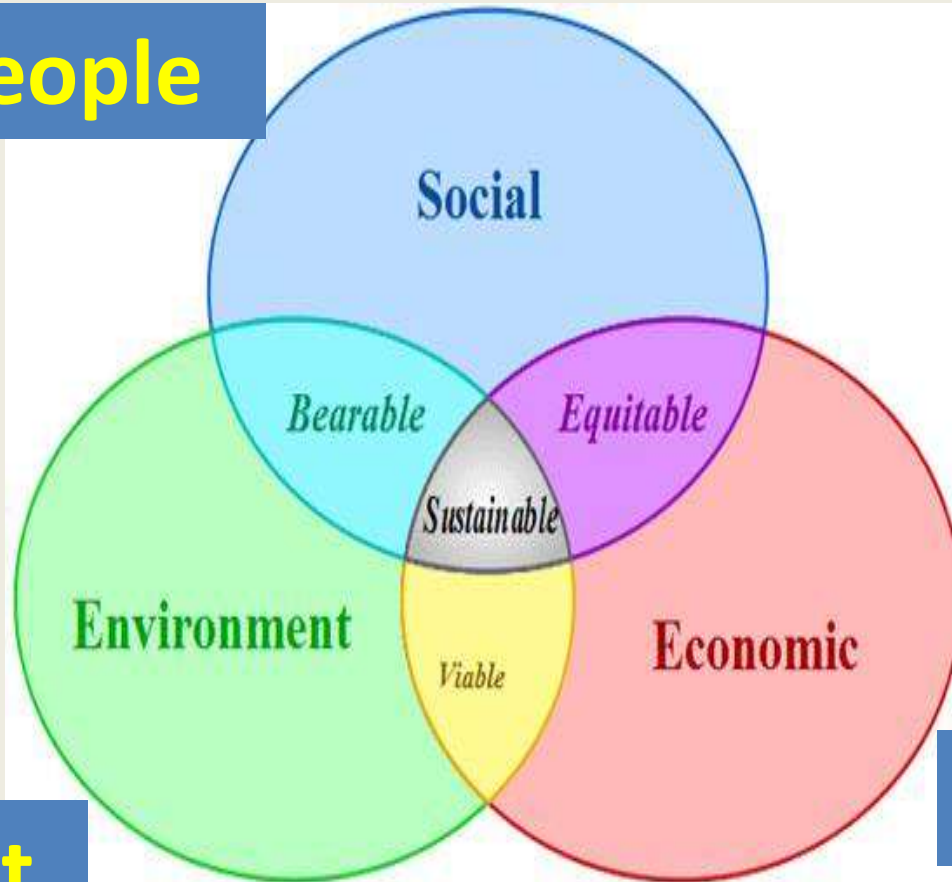
'Desi Jugaad': Fully utilizing the gravitational force to augment the rocket force thereby reducing the payload to be carried. ISRO didn't follow the 'traditional paths', Thus becoming the first country to get to Mars in the first attempt

They circumvented the lack of a rocket powerful enough to launch the satellite directly out of the earth's gravitational pull by having the satellite orbit the earth for a month to build up enough speed to break free from the earth's gravitational pull

'Desi jugaad' – India's art of ingenious improvisation & creativity

Value by Design

People



Planet

Profit

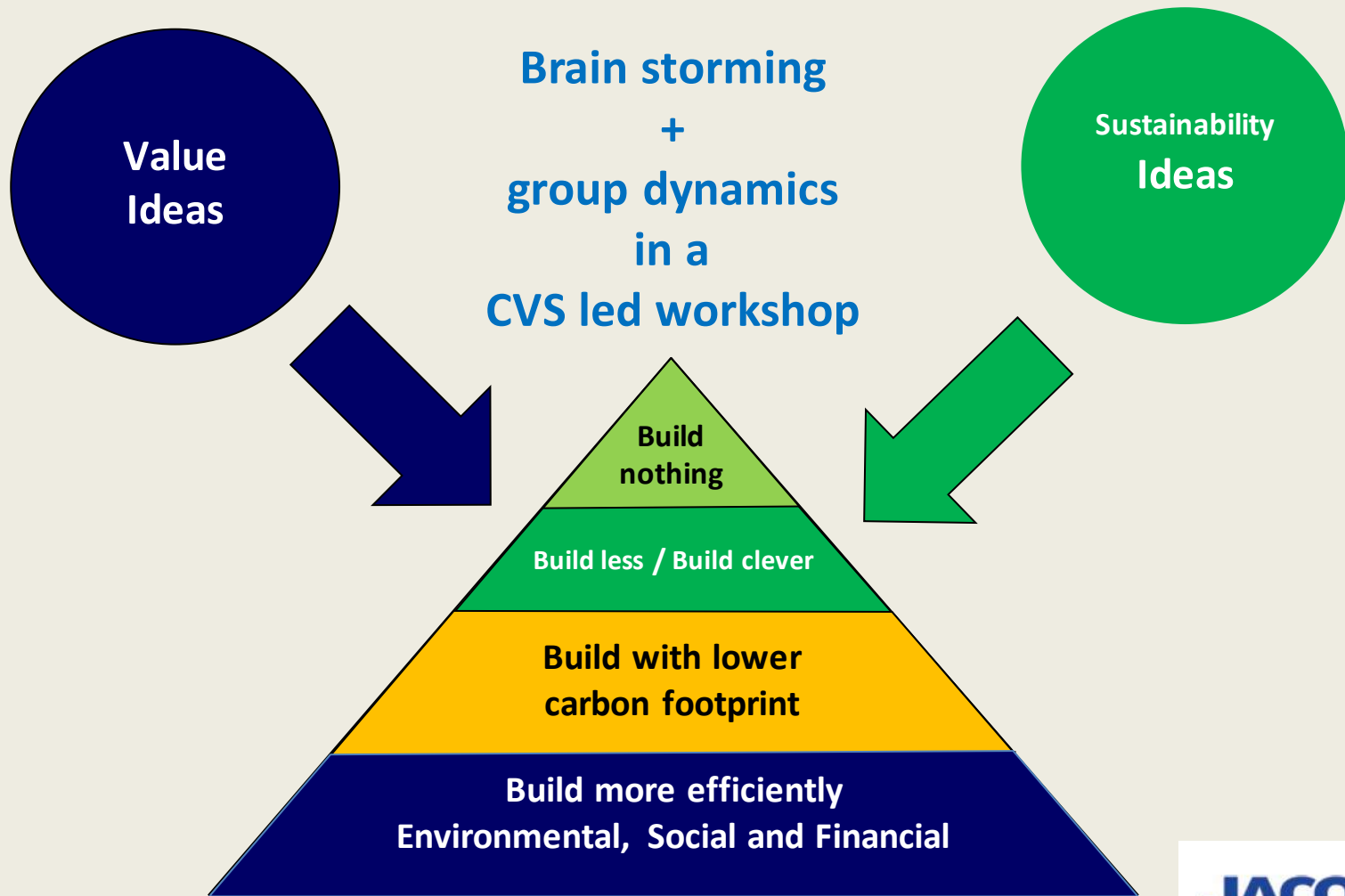
*A holistic enhancement
of the social, environmental and financial values - Value by Design*

JACOBS

Generating / Integrating Ideas

Jacobs**Value+**

Jacobs**Sustainability+**



JACOBS

Construction Waste - Footprint

Construction produces 50% volume of the garbage found in landfill.



- Future waste
- Ready to distribute

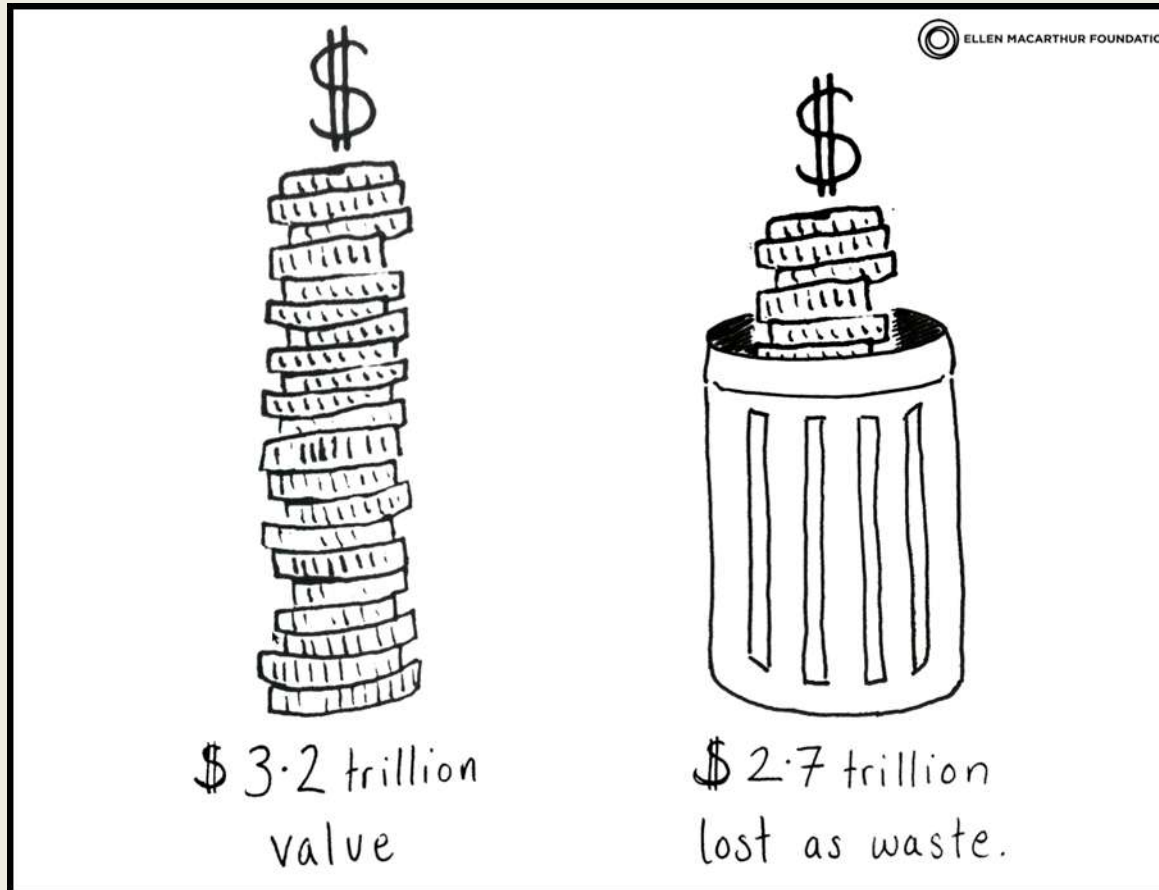


HOW BIG IS YOUR
FOOTPRINT?



e-waste

Linear Economy - Wastage

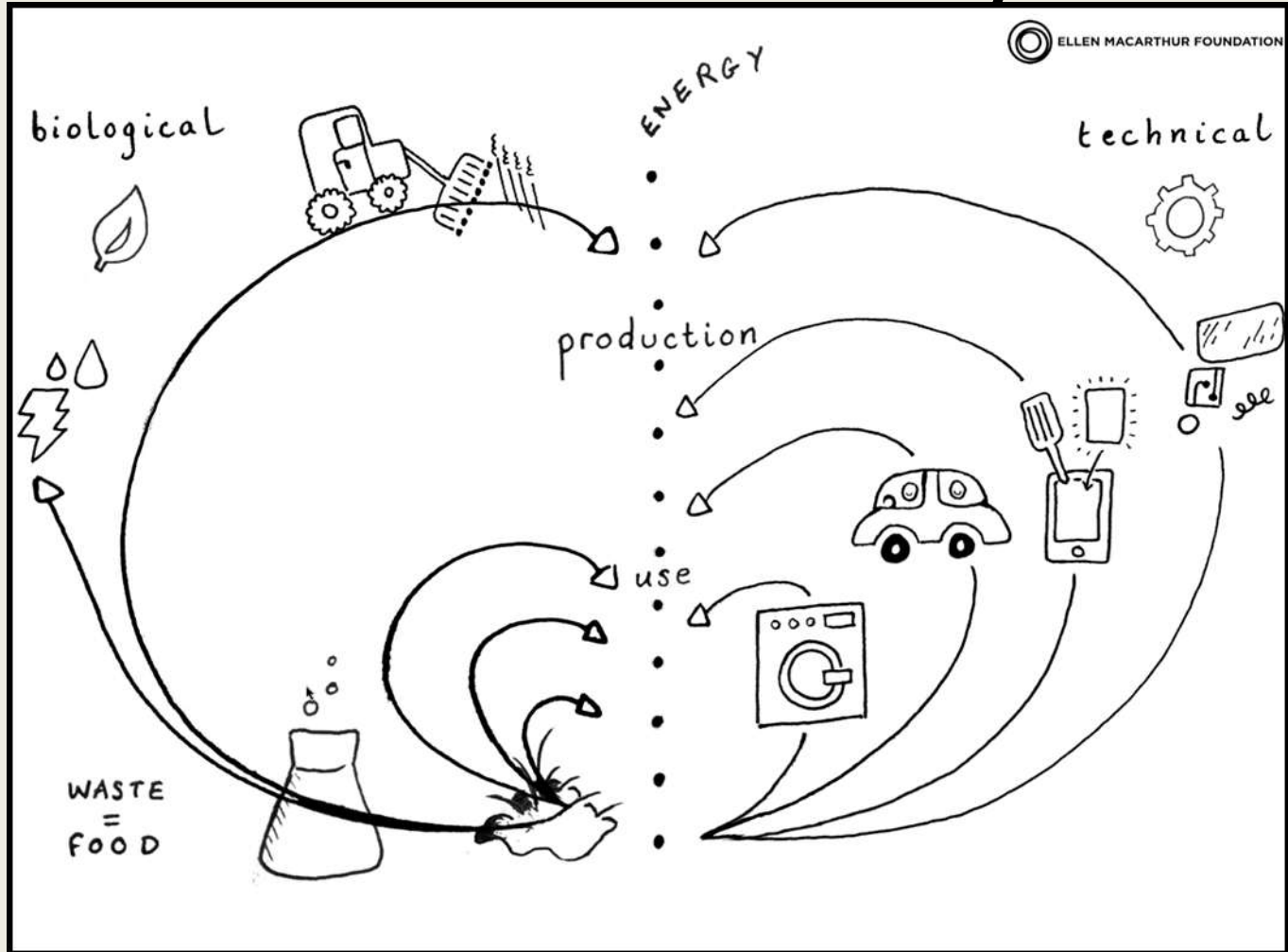


Commodities produced and wasted

Linear economy is inherently inefficient, compared to circular economy.

From Jamie Butterworth - the CEO of the Ellen MacArthur Foundation Webex Seminar 25 Nov 2013

Circular Economy



Circular Economy - sell performance, not products

Example: sell luminous performance (lights) instead of lighting equipment

From Jamie Butterworth - the CEO of the Ellen MacArthur Foundation Webex Seminar 25 Nov 2013

Sell performance, not products – lights and lighting equipment model



Circular Economy - sell performance, not products

Example: sell luminous performance (lights) instead of lighting equipment

From Jamie Butterworth - the CEO of the Ellen MacArthur Foundation Webex Seminar 25 Nov 2013

It's about the *Choices** we make

Choices between Design for obsolescence
 Design for renovation

Waste into value !

Construction
Auto manufacture
Electronics

Reuse and Recycle

- To be driven by business, not by legislation
- Circular economy-ready products

Integrate:

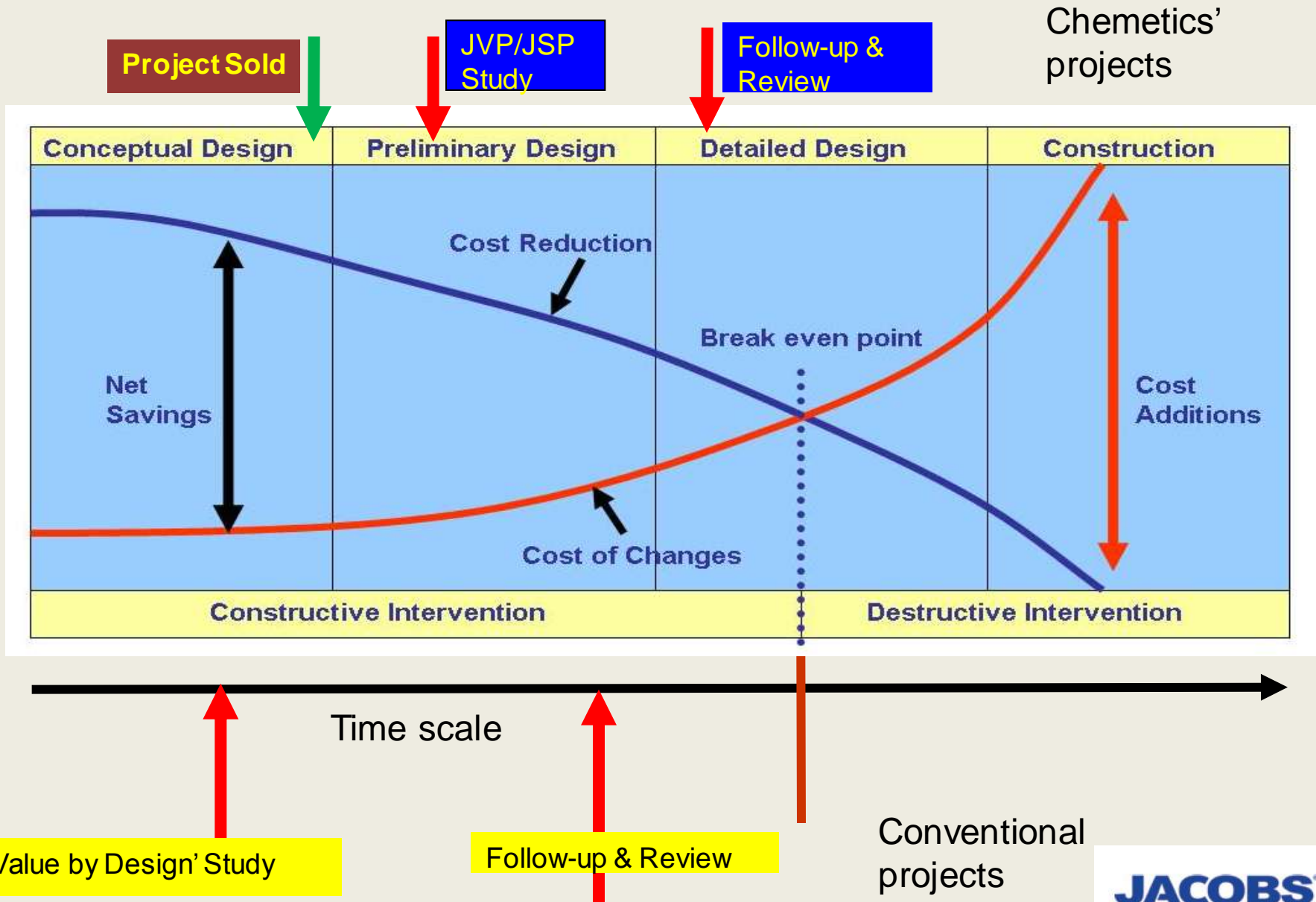
Design Engineering and Business – not separate towers

Linear economy is inherently inefficient

But circular economy is very powerful conceptually.

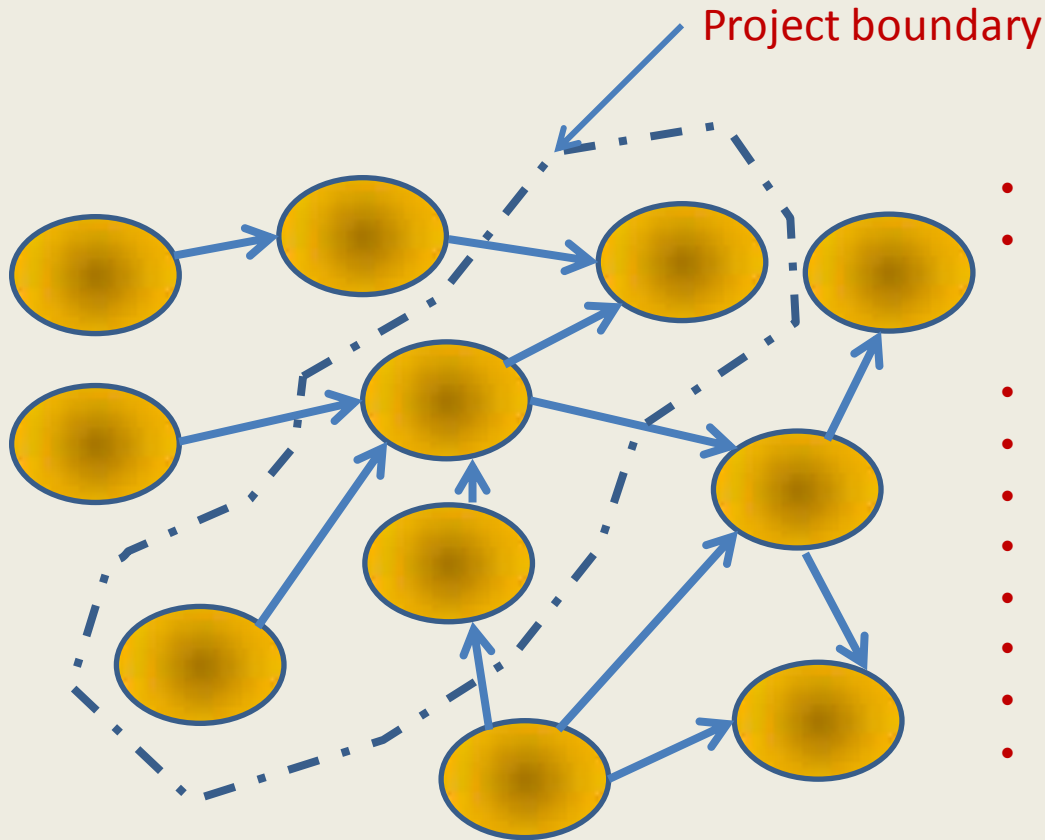
***Value by Design!**

Is there a good time to Integrate JVP & JSP?



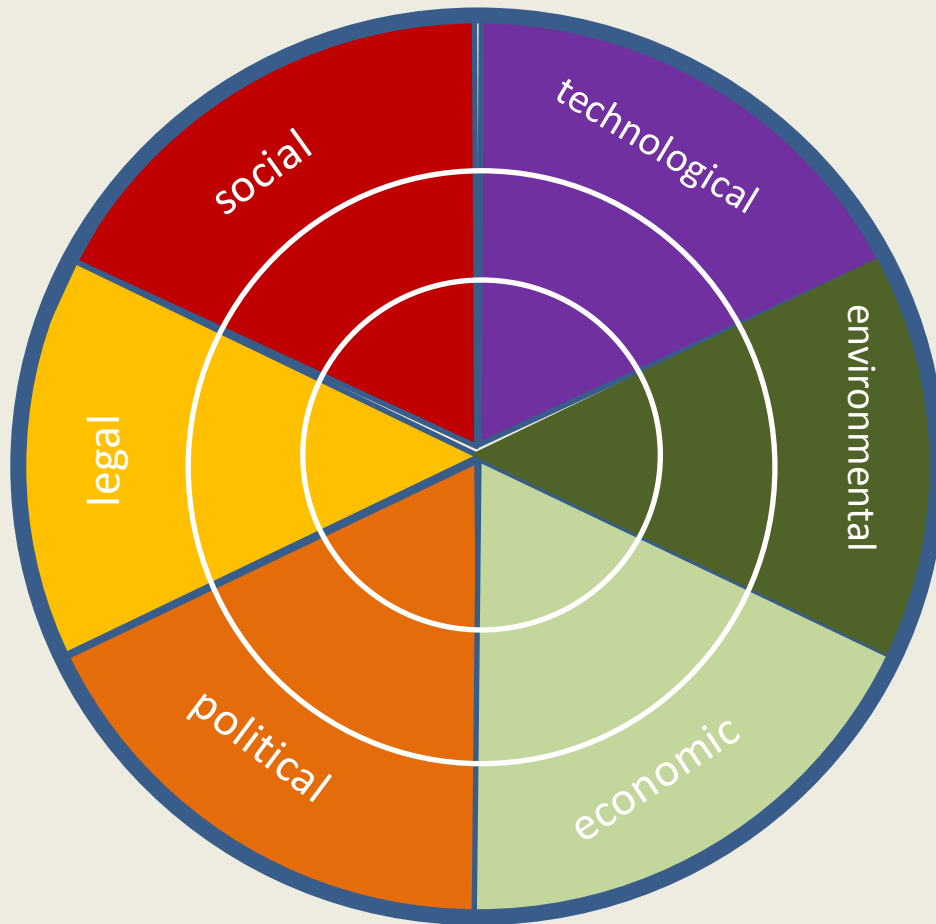
Systems Map / Function Analysis

F A S T (Value Methodology)



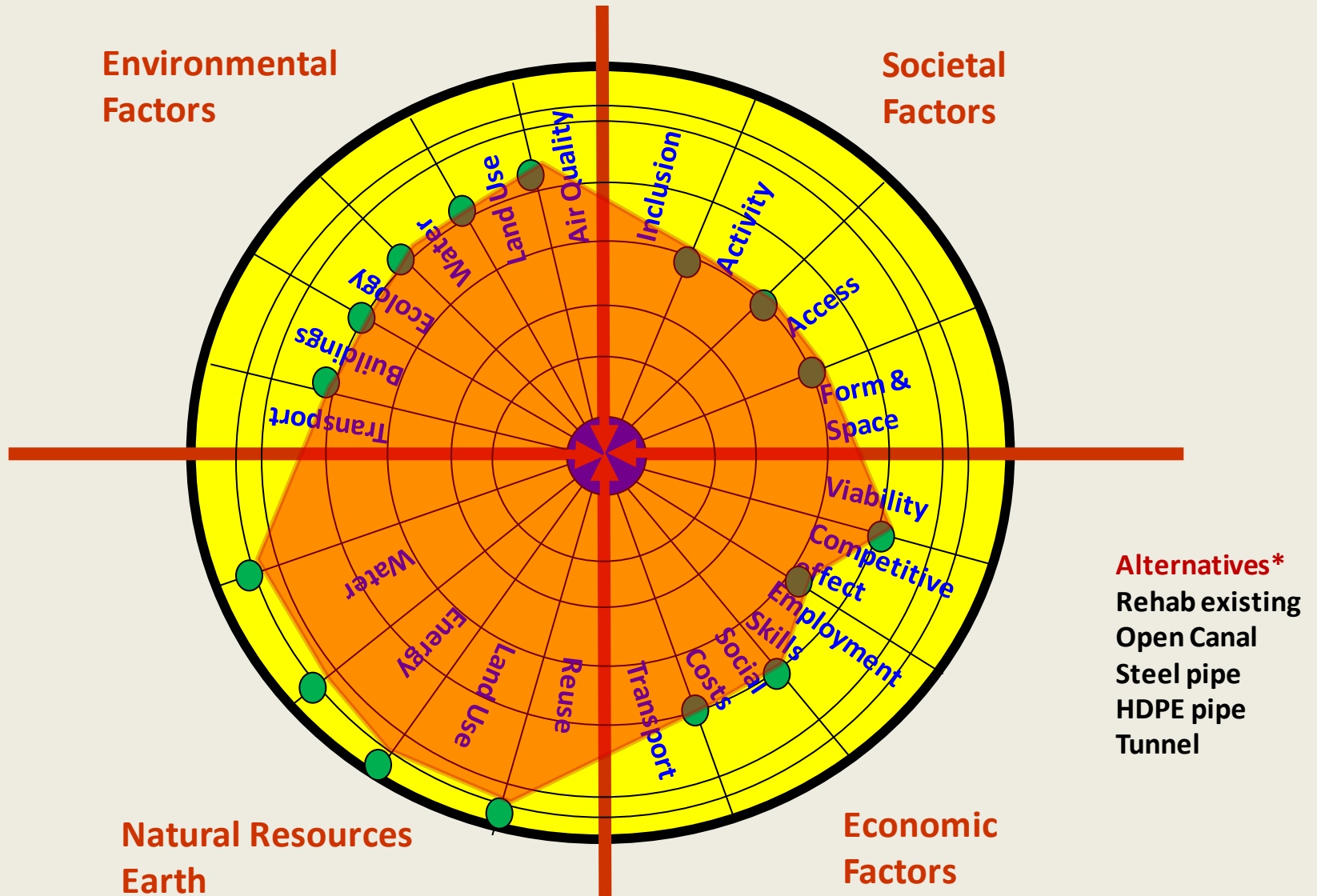
- **Basic functions**
- **Secondary functions**
 - **Necessary**
 - **Unnecessary**
- **Inter relations**
- **Dependencies**
- **Externalities**
- **Critical relationships**
- **Stakeholder related**
- **Political / Strategic**
- **Perceived project boundaries**
- **Are we doing the right project?**

Issues Wheel



- **Challenges & Risks in each sector**
- **Long term issues**
- **Dependencies between issues**
- **Root cause of risks**
- **Most important issues to resolve**
- **Opportunities for trade-offs**
- **What are the 'holy-cows'?**
- **What are the 'must-haves'?**
- **Key success factors**
- **Key failure factors**

Sustainable Appraisal of the Tunnel Proposal*



Value by Design & Sustainable Development

Potential Value Strategies include:

- Partnership
- Partnering approach
- Input from public and stakeholders:
 - Impact mitigation program for all affected parties
 - Minimize public disruption

PEOPLE

- Maximize Recycling
- Use of 'Green Construction'
- Minimize green house gas emissions (carbon savings)
- Environmental and noise monitoring during construction
- Tree protection and replanting /replacement program

PLANET

- Optimized cost,
- minimize land use
- State of the art technology (long term planning)
- Integration of enhanced public safety, reliability

PROFIT

The development to achieve triple bottom line balance

Value by Design Strategies

Projects are ideally expected to achieve triple bottom line balance

Environmental	Social	Financial
Minimize energy, natural resources, water, etc.	Partnership with local and global players. Social well being	Optimized cost , minimize land use
Maximize Recycling	Partnering approach Share risks and rewards	State of the art technology (long term planning)
Use of 'Green construction' (LEED, etc.)	Input from public and stakeholders:	Integration of enhanced public safety, reliability
Minimize green house gas emissions (carbon savings)	Impact mitigation program for all affected parties	Profit sharing, partnering, risk alignment
Environmental and noise monitoring during construction	Minimize public disruption Provide job opportunities	
Tree protection and replanting program	Great Synergy with Safety (Beyond Zero, Safety by Design, etc.)	

PLANET

PEOPLE

PROFIT

Sulphate Removal System (Chemetics)



Chemetics Inc. (a Jacobs company) Sulphate Removal System (SRS). The benefits of Chemetics SRS are that it dramatically reduces operating costs and also offers environmental benefits over traditional methods.

80+ Chemetics patented SRS systems in operation worldwide.

Operating cost savings :

Cost recovery under 2 or 3 years

Savings in salts and other chemicals:

- \$2 million annually

Environmental benefits

- Reduction in use of chemicals
- Reduction in transportation
- Reduced effluents

Social

- Better working environment

Case Study: Typical SRS Unit

Jacobs Value Plus (JVP)

Present Value of Annualized Savings

\$10,287,790

Total Savings (for Project life) **\$7,870,990**
(net of investment)

Jacobs Sustainability Plus (JSP)

Salt savings per year: 48,336 Metric Tonnes
20 year life

Calculated kg CO2 per year 526,959 KG CO2

Calculated Metric Tonnes CO2
for entire useful life **10,539 tCO2e**

Jacobs 2013 Sustainability Report

OUR PROCESSES & TOOLS

Jacobs is also a member of the U.S. Department of Energy CHP Partnership. Through our participation with the Partnership and our involvement with CHP projects throughout the U.S., the Partnership estimates that in 2012, Jacobs CHP projects contributed to avoided greenhouse gas emissions exceeding 1 million metric tons, the equivalent emissions produced by 129,000 average homes annually.

Building Information Modeling

Building Information Modeling (BIM) facilitates the complex processes and analysis associated with building performance and evaluation. We create models to predict building performance and include facility sustainability analysis using standards such as the United States Green Building Council's Leadership in Energy and Environmental Design (LEED), mechanical simulation and analysis, daylighting, energy performance, and life cycle assessment. Linking BIM to analysis tools can provide immediate feedback for alternate design options that can help make a project more sustainable.

Carbon Calculator

The Carbon Calculator was originally developed in 2007 as a result of the request from the Environment Agency (EA) in the United Kingdom. The EA, the key environmental regulator in England, commissioned Jacobs to develop a carbon calculation tool to support sustainability decisions for its flood risk construction work. The Carbon Calculator calculates the embodied carbon dioxide of materials, plus CO₂ associated with transportation of those materials. Since its creation, Jacobs has continued to develop subprograms and additional uses for the Carbon Calculator so it may be used by more construction clients, contractors, and consultants for their project needs. Below are just some of the things the EA Carbon Calculator includes:

- Top 10 tips based on lessons learned from the use of the tool to date
- Hints and tips to reduce carbon based on materials selected
- Simplification of the plant emissions, site energy use, and personnel travel sections to reduce input time and improve clarity

- Inclusion of updated ICE data in units of CO₂ equivalents
- Capture of lessons learned for each Project

Operating & Maintaining

Commissioning

Commissioning describes services designed to continually improve asset management and performance and plays an important role in sustainable design. At Jacobs, commissioning goes beyond industrial facilities and buildings. Maintaining system performance of any asset contributes to increased energy efficiency over the life cycle of the asset and furthers the sustainable goals of our clients. At facilities we operate, our goal is a safe and environmentally sound system that performs at the highest level possible throughout its life cycle. We strive to maintain performance that is within 98 percent of the original design performance level.

Jacobs' Sulfur Solutions

We are the global leader in treating gas and recovering sulfur from fossil fuels for the global heavy industrial and process markets. We apply expertise, technology, and full delivery for cost-effective sulfur recovery plant operations. We find optimal solutions using open processes, our proprietary SUPERCLAUS[®] and EUROCLAUS[®] technologies, or others that we sub-license. Our Compigno SUPERCLAUS[®] technology recently marked its 20th anniversary in the markets. Our technologists are experts in all of the key processes to maximize "Sulfur Block" performance. These include gas/liquid treating technologies, NH₃ destruction, hydrogen destruction, CO methanation, sulfur desposing, and sulfur handling.

Sulfate Removal System:

An Environmental Success Story for Chlor-alkali Plants

The chlor-alkali industry produces chlorine and caustic soda in about 600 plants worldwide. A collective commitment to ensuring the best health, safety, and environmental practices in the manufacture of chlor-alkali products is essential to the sustainable development of this large and closely watched industry. Our Chemicals' patented Sulfate Removal System (SRS) is a novel nanofiltration-based process that replaces

Environmental success story from Chemetics (SRS)

OUR PROCESSES & TOOLS



Large unit with automatic control.



A smaller SRS unit with manual control.

conventional methods of sodium sulfate control in chlor-alkali plants. Based on the principle of selective filtration of molecules and ions through membranes, the SRS treats brine effluents to reduce the effluent volume and increase the sulfate concentration — both by a factor of more than 10. As an environmentally beneficial and economically attractive technology, the SRS also eliminates solid wastes and the handling of hazardous compounds associated with other treatment methods.

SRS Unit in Action: Operating Results

The stream summary table shown, which compares to a recently sold SRS unit with a capacity of 242 kg/h Na₂SO₄ removed, summarizes the flows into and out of the SRS unit, providing a quantitative basis for assessing its environmental benefit. This particular SRS reduces the brine purge volume from 25 m³/h to 2.3 m³/h (a reduction of 90 percent) or completely eliminates the consumption of 8.5 tons/day of toxic barium chloride and the associated production of 8.5 tons/day of barium sulfate solid waste.

Reliable Performance

Our Chemetics SRS technology has operated successfully over many years, and has been adopted by more than 70 plants worldwide. In addition to its environmental and occupational safety benefits, the technology offers an attractive return on investment through reduction of plant operating costs, and has found widespread acceptance in the chlor-alkali industry.

SRS-STREAM PROPERTIES



Stream Flow (mass/concentration)	Units	1	2	3
Sodium Chloride NaCl	kg/m ³	494	23	471
Sodium Chloride NaCl	kg/m ³	9,380	200	5,482
Sodium Sulfate Na ₂ SO ₄	kg/m ³	331	6.7	98
Water Impurity	kg/m ³	0	0	0
Water H ₂ O	kg/m ³	44,125	1,881	42,134
Total Mass Flow	kg/m ³	54,830	2,045	52,185
Volumetric Flowrate	m ³ /h	49.4	2.3	47.1

Understanding Carbon Footprints

- Embodied Carbon or embedded carbon
 - In processing
 - In transportation
 - In construction
 - Installation
- Operational Carbon
 - Operation of facility
 - HVAC
 - Process
 - Energy Consumption
- Typical units used in estimating embodied or operation carbon are
 - CO₂ or CO₂e (carbon dioxide equivalent).
 - Every material or fuel has its own CO₂e factor per kg of material or kWh of energy
- **CO₂, CH₄, NO_x, SF₆, PFC & HFC.**

(Six greenhouse gases are recognised under the Kyoto Protocol)

Reducing 1 ton of NO_x is the equivalent of reducing about 300 tons of CO₂.

(Nox is Nitrogen (di)oxides – notorious air pollutant causing acid rain)





Understanding Carbon Footprints...

Greenhouse Gas	*GWP over 100 years	Typical Sources
Carbon Dioxide (CO ₂)	1	Energy Combustion
Methane (CH ₄)	25	Decomposition
Nitrous Oxide (N ₂ O)	298	Fertilizers, Car Emissions, Manufacturing
Sulfur Hexafluoride (SF ₆)	22,800	Switch Gear, Substations
Perfluorocarbon (PFC)	7,390 – 12,200	Aluminum Smelting
Hydrofluorocarbon (HFC)	124 – 14,800	Refrigerants, Industrial Gases

*GWP (Global Warming Potential):

- **Global-warming potential (GWP) is a relative measure of how much heat a greenhouse gas traps in the atmosphere.** It compares the amount of heat trapped by a certain mass of the gas in question to the amount of heat trapped by a similar mass of carbon dioxide.
- A GWP is calculated over a specific time interval, commonly 20, 100 or 500 years.
- GWP is expressed as a factor of carbon dioxide (whose GWP is standardized to 1). For example, the 20 year GWP of methane is 72, which means that if the same mass of methane and carbon dioxide were introduced into the atmosphere, that methane will trap 72 times more heat than the carbon dioxide over the next 20 years.[1]

Carbon Footprint of Concrete



The CO2 Numbers (approximate)

1 tonne clinker = 1 tonne CO2

8,000 Km



Forest sink
2,000 m2/a



concrete column



Sustainability+ Tools & Resources

Carbon Calculators:

- Lots of links available on the Web
- UK Environment Agency (EA) calculator
- National or Client standards where available



Useful Websites:

- US Green Building Council www.usgbc.org
- Global Reporting Initiation (GRI) www.globalreporting.org
- Site Design Relevance www.sustainablesites.org
- Building Environmental Design Relevance
www.greenglobes.com

Integrated Practice of Jacobs' Sustainability (JSP) and Value Plus (JVP) – Implementation Plan

- **Project Kick-off meeting - Week 1**

Basic training presentation for Integrated V+S+

To be done as part of the kick-off when all major players are present. May be done after the projects' commercial and legal discussions. It is important to have all major players in the project present. The PM must be committed to the cultural shift to be brought out by the V+S+ . All engineering discipline leads must be present..

- **Project meeting - Week 4 or 5 (or as decided by the project team)**

Brain-storming/steering for Integrated V+S+

To be done after the basic layout design is ready. Discipline leads, engineers and designers must attend the session. Major 'buckets' – functional areas are to be identified before this meeting and updated at the meeting. At the session, ideas are developed within each bucket and combine ideas as required. Create ideas, assign idea owners.

Use the Value Methodology & the service of a CVS as required

- **Follow up meeting - Week 10 or 12 (or as decided by the project team)**

Follow-up Meeting for Integrated V+S+

To be done after the idea owners have a chance to deliberate on the ideas. Report back to the project team. Decide on ideas worth proceeding and reporting.

- **Accountability: PM**
- **Responsibility: All lead engineers and designers**
- **Participants: Project team**
- **Process Support, formal reporting - Champion**
- **Sustainability training – Champion**
- **Monthly Global call / Webex Meeting**

Value by Design – Integrated JVP/JSP

Strengths

- Optimization of quality/ performance
- Overall cost optimization
- **Appropriate, sustainable technology**
- **Sustainable (Reduce, Reuse and Recycle) approach**
- Enhanced reliability and safety
- Socially responsible solutions
- Risk mitigation (bad news upfront)

Limitations/Hurdles

- Value team should be involved right from the beginning
 - Client /project policy must be clear upfront
- Reliance on creativity and lateral thinking
 - Team work is a must
- Change in culture may be needed
 - Can result in many intangible changes!
- Initial cost (time and effort) may be a deterrent
- Management may not see the importance

Chemetics (Jacobs Vancouver) Program Results –2014

- **Value Plus**

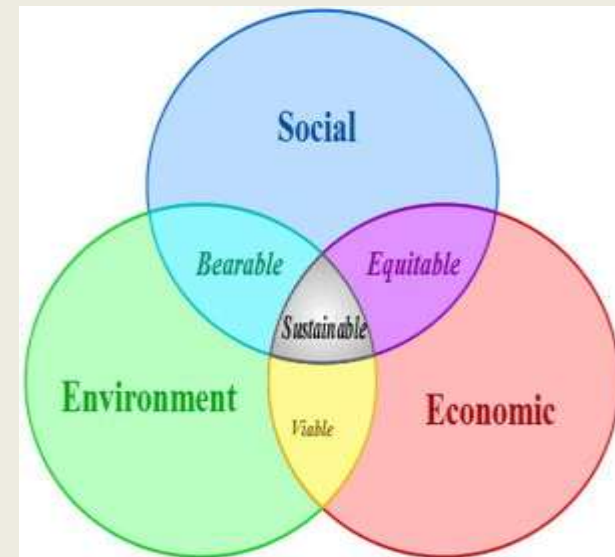
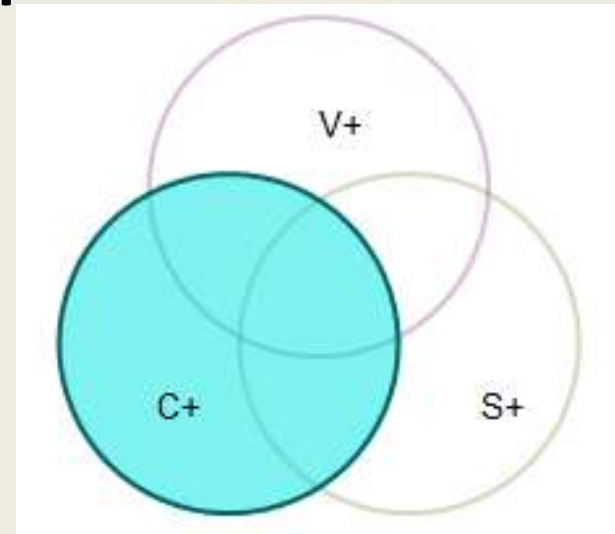
- Actual Savings to Clients \$135Million
- (of the \$6 billion globally within Jacobs)

- **Sustainability Plus**

- Actual t CO2e 292,758 tons
- Other 18,000 t SO2 / 5,600 t Nox
(some in BC!)
- (of the 4.3 million tons of CO2 globally within Jacobs)

- **Community/Social Benefits**

- Better Noise abatement
- Cleaner air , reduced emission fog
- Improved the safety and reliability
- Local jobs /contracts



Business/Organizational Benefits

- **Allows the Client PM to look good !**
- **Differentiates you from the competition**
- **Promotes a value oriented mindset**
- **Serves as evidence for proposals and sales efforts**
- **Encourages teamwork**
- **Documents good ideas applicable to future projects**
- **Delighted Clients, loyal Clients, long term relationship, repurchase loyalty**
- **Demonstrates that engineering is an asset and not a cost**

Frequently Raised Concerns Within Project Teams

- **It is 'Mumbo Jumbo' and 'feel good' technology – too much hot air?**
May well be!; But it is worth a try! Have a champion in the SBU
The Value idea and methodology has been there since WW II
- **Are all ideas worth recording?**
Nothing is too small to record - cumulatively (whether across a project or SBU) they add up to a big saving
- **We are already making a profit in this project/product – Why do it?**
Improvement is possible, desirable and expected
- **Client won't approve it?**
Sustainability+ ideas do not need client approval to be registered
Be subtle if presenting to client - add Sustainability+ ideas section to progress report, which will be sent to client for comment and approval
- **Is it too time consuming?**
Keep it simple! Use rough estimates - it is not a technical submission
Keep a simple project Added Value / Sustainability+ /
- **Too difficult to work out the numbers to demonstrate?**
Use the EA Carbon Calculator (or values from) to calculate savings
Or send idea to someone who can calculate it (Sustainability Team, Experts, etc...)

OUR CULTURE

comprehensive solutions reducing disaster risks and impacts. Our services are focused into four functional areas:

- Prepare: Administrative and logistics readiness to save lives and limit disruptions to service and supply chains
- Mitigate: Harden facilities, max load infrastructure and ensure back-up power generation
- Respond: Promote life/safety, clear debris, restore utilities, conduct temporary repairs
- Recover: Plan and complete permanent infrastructure and facility repairs

JacobsValue+

Our JacobsValue+™ program is an intrinsic part of the way we do business. We constantly strive to develop the best, most cost-effective solutions for our clients, and JacobsValue+ supports those efforts every day. The program tracks innovative practices and ideas and then implements them in applicable situations, passing the value created (typically savings) and benefits on to our clients. The primary objective of JacobsValue+ is to deliver, measure, and demonstrate value to our clients by increasing their return on investment. In 2013, we saved or avoided more than \$6 billion for our clients.

JacobsSustainability+

Complementing JacobsValue+ is JacobsSustainability+™, a data-capture tool designed by a global team of Jacobs' sustainability experts. Originally released in 2010, JacobsSustainability+ captures sustainable-related information specifically within the categories of carbon savings, green buildings, and energy incentives.

Usage of the tool across our operations continues to increase significantly year by year. We see more investment in the data captured and recorded, and many new ideas and suggestions for tool improvement. Using more advanced-measurement processes allows us to take lessons learned from the regions with the highest usage rates and apply them to regions where increased usage is desired.

In 2013, we saved 4.3 million metric tons of carbon for our clients through JacobsSustainability+.

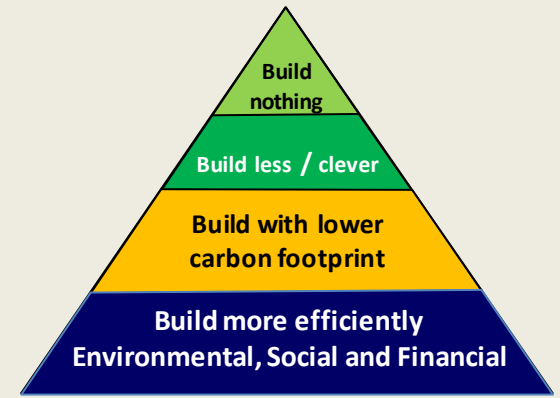
Examples of innovative carbon or cost-saving solutions captured in JacobsSustainability+ include:

- For an energy client, we developed a methodology in which gas is recompressed prior to venting, therefore reducing the carbon footprint/output of the project. For this particular project, about 9,000 tons of CO₂ was saved by recompressing gas before venting.
- For a higher-education client, we helped design and implement a combined heat and power plant that achieved savings of \$1 million in its first month of operation.
- For an infrastructure client, we modified existing assets and constructed new pipelines, therefore removing the need for construction of a new concrete service reservoir. Through construction avoidance we were able to save 5,390 tons of carbon dioxide. Taking into account reduced operational carbon, the carbon impact of building alternative pipelines, and assumed asset life, the net carbon savings equaled 32,640 tons of CO₂.

We continue our efforts to ensure JacobsSustainability+ cultivates a stimulating environment for our project teams to develop ideas for the capture of sustainability-related data. Improving measurements and tracking are ongoing goals we work toward, fostering continual improvement.

Culture of Sustainability

In order to hone our outward focus for our clients, we must also focus inward, on our own efforts to advance sustainability at Jacobs. In 2013 we renewed our commitment to sustainable office space, energy savings, paper savings, carbon reduction, and more. We continued to make advancements in creating new learning opportunities for our employees, updated health and wellness programs, and saw yet another increase in our charitable giving program.



Reducing Carbon Footprint

Saving Operating cost / energy savings

Build Nothing Solution!

Office Sustainability Programs

Good for Business

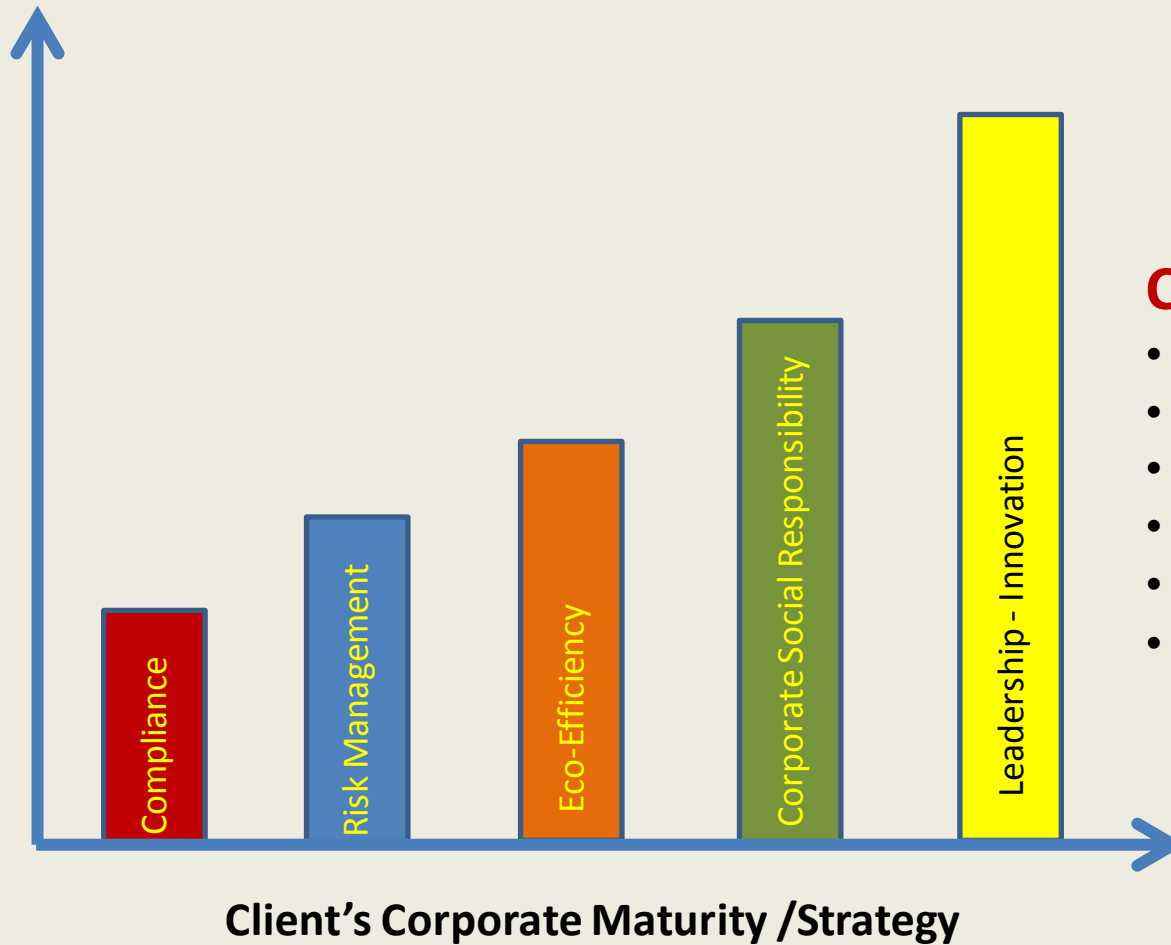
Visibility

Corporate Service Responsibility

Global Tools

Cultural Shift

Critical Success Factor(s)



Corporate Values

- Strategies
- Mindset & behaviours
- Current position
- Future position
- Communication
- Customized solution

Critical Success Factors for Value by Design

Attitude and Readiness of Participants

Right attitude, appropriate stakeholders, awareness of process, Corporate maturity level.

Executive Support / Owner/Client Maturity

Value by Design workshops, sponsorship, implementation of results

Project Charter - Partnering

Create a project charter to clearly show the 'vision' subject to corporate policies

Management of Process

Clear objectives, timelines, review and feedback (who?, what?, when?)

Methodology / Standard SAVE Process

Value job plan must be followed systematically

Use a Certified Value Specialist (CVS) – professionals registered with American Society of Value Engineers

Professional Workshop Facilitation

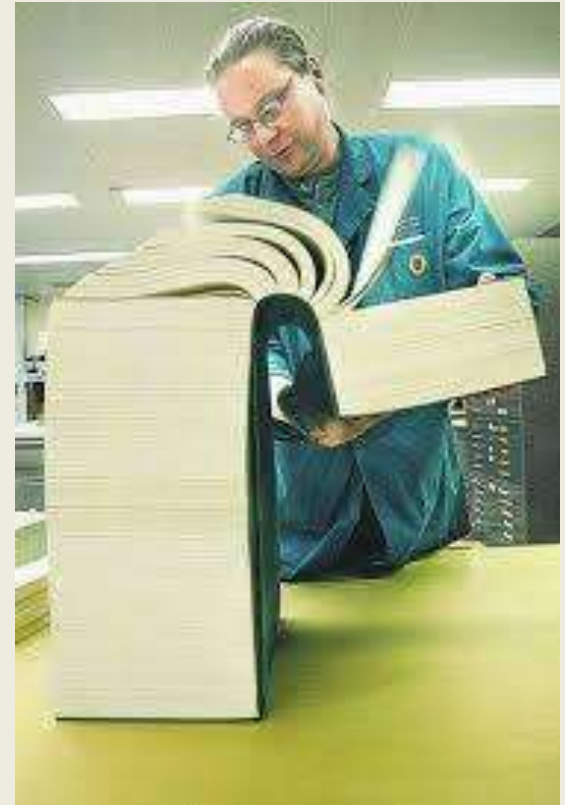
Probing with right questions, using appropriate tools, managing the process, maintaining momentum of team, etc.

Value by Design – Integrated JVP/JSP is NOT.....

- What a good Project Manager “does already” (business as usual?)
- A task that can be fully outsourced to a consultant (check list?)
- An effort to trade off essential functions to cut costs (cheapen!?)
- Merely a review to eliminate “Gold Plating” (sharpen the pencil?)
- A method for reducing costs through degrading performance and reliability (unsafe practices?)
- In anyway intended as a reflection on the competence of the designer (hard nose /micromanage?)
- Only done at end of design or start of construction to return project to budget (damage control?)
- An effort to exhibit environmental stewardship (show off?)
- An effort to keep paperwork intact (hot air- no action!?)

Recap....

- **Jacobs' Corporate Profile**
- **Growing Trends in Business**
- **Integration of Sustainability & Value Principles**
- **Linear Vs. Circular Economy**
- **Value Strategies**
- **Projects, Success Stories**
- **Carbon Footprint**
- **Appraisal of Sustainable Values**
- **Integrated Practice of Jacobs Value Plus and Sustainability Plus**
- **Critical Success Factors & Concluding Remarks**



**Integrated Practice of
Jacobs Value Plus and Sustainability Plus –
*A new paradigm in project management
for enhancing holistic value.***

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Toronto
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