Sustainable Design
ENVIRONMENTAL STATEMENT 2013

GREEN MANUFACTURING HISTORY
NanaWall and Solarlux have been firmly committed to preserving our environment, long before the sustainable design consensus was created. For wood systems, our manufacturing facilities use water based finishes which use less energy, have limited VOC and are 100% recyclable. For aluminum systems, we use environmentally friendly powder coated finishes. The Solarlux plant in Germany and the Solarlux-Nana LLC plant in Richmond, California are both ISO 9001, Quality Management Standard, certified. The Solarlux plant in Germany is also ISO 14001, Environmental Management Standard, verified. The Richmond, California Plant in pending ISO 14001 certification.

With over a million panels installed worldwide, in all climate zones, we are the World Leader in exterior opening glass technology. NanaWall is a proud member of the US Green Building Council and a sustainable design continuing education provider for the American Institute of Architects, and a founding sponsor of the AIA Committee on the Environment (COTE).

GREEN BY FUNCTION
NanaWall is a Lifestyle, not just a green product. The flexibility of the operable glass walls create a smaller carbon footprint by allowing designers to have flexible use spaces (interior & exterior), natural ventilation, acoustical separation, daylight and exhilarating views. NanaWall operable glass wall systems creates value, luxury and shelter. The NanaWall systems can be energy efficient, acoustical, and weather-resistant, including systems that can withstand hurricane forces. But the real value of the NanaWall is the Exhilarating Room Transformation experienced when you open the glass wall system and the outdoor environment and indoor environment becomes one seamless environment.

SUSTAINABLE PRODUCT
NanaWall glass operating walls are NFRC Certified Systems when using select glazing with industry leading U-Factors and SHGC. Our aluminum extrusions are 100% recyclable and have a 25% pre-consumer recycled content. FSC and PEFC certified wood with proper Chain of Custody Certification is also available as an option. Our unique packaging is produced from 60% recycled material and is 100% recyclable. And the WA67 with triple glazing meets Passive House Standards.

RECENT SUSTAINABLE DESIGN PROJECTS			
APPLICATION	**RATING**	**ARCHITECT NAME**	**LOCATION**
SHOWHOUSES			
Solar Decathlon 2013 - UNLV			Las Vegas, NV
Solar Decathlon 2013 - Stevens Institute of Technology			Hoboken, NJ
Solar Decathlon 2013 - U. of Texas at El Paso			El Paso, TX
Solar Decathlon 2013 - USC			Los Angeles, CA
RESIDENTIAL			
Cincinnati Design Show house	Gold	Great Traditions Homes	Cincinnati, OH
Sunset House Monterrey	Platinum	Hood Thomas	Monterey, CA
Tassafaronga Village	Gold	David Baker + Partners	Oakland, CA
Omena Residence	Gold	dkf Architecture	Cambridge, MA
Fort Collins Residence	Gold	Neenan Company	Fort Collins, CO
Margarido House	Platinum	McDonald Construction & Development	Oakland, CA
Carmel Residence	Platinum	Carver + Schicketanz	Carmel, CA
Rose Cottege	Platinum	HL Turner Group Inc	Concord NH
Jacksonville Residence	Platinum	C Squared Design	Jacksonville, FL
Victoria Residence - BC	Platinum	BTH Construction	Victoria, BC
COMMERICIAL			
Kresge Foundation Headquarters	Gold		Troy, MI
Horicon Marsh International Education Center	Silver		Horicon, WI
IFAW - Headquarters	Gold	DesignLAB Architects	Boston, MA
International Professional Services	Gold	Fox Architects	Washington, DC
Freeman Web Building	Gold	Hastings Architecture Associates LLC	Nashville, TN
NRGH Hospital			Nanaimo, BC
Phipps Conservatory and Botanical Garden	Platinum	Design Alliance Architects	Pittsburg, PA
Salt Rivers Field	Gold	HKS	Scottsdale, AZ
Shore Hotel	Gold	Gensler	Santa Monica, CA
Watsonville Water Resource	Platinum	WRNS Studio LLP	Watsonville, CA

LEED for HOMES VERSION 2008/2010
HOW NANAWALL PRODUCTS MAY CONTRIBUTE

The purpose of this document is to help residential designers and builders achieve the highest possible energy efficiency for housing or homes. Our products are capable of meeting the testing guidelines of the National Fenestration Rating Council, the ANSI ICC 700-2008 and the Energy Star program. The following will show you how to maximize project LEED credits using our products to help obtain maximum points under the LEED for Homes program. LEED is a consensus based standard useful for managing the development of environmentally responsible buildings. A LEED for Homes certified home must obtain a minimum of 45 points out of 136 (Silver 60 pt, Gold 75 pt, Platinum 90 pt). Additional benefits can include Tax and utility rebates, along with marketing incentives. More information is available through the USGBC @ www.usgbc.org.

EA 1: OPTIMIZE ENERGY PERFORMANCE (1-34 points)
NANAWALL SOLUTIONS: NanaWall Operable Glass Walls are available in various glazing options with NFRC ratings that meet Energy Star door performance levels including U-Factors as low as 0.17 and a SHGC of 0.21. Please see product structural and thermal performance data on website for specific product performance.

EA 4 : WINDOWS - PRESCRIPTIVE PATH (1-3 points)
(Alt to EA1 above)
NANAWALL SOLUTIONS: NanaWall Operable Glass Walls meets the 4.1 Good Windows prerequisites and also qualifies for Exceptional Windows (3 credits). WA67 is available in triple glazing with argon fill, which has a U-Factor of 0.17 and SHGC of 0.26. WD66 is available in triple glazing with U-Factor of 0.19 and SHGC of 0.29. SL70 with Heat Mirror TC88 glass with Krypton fill has a U-Factor of 0.26 and SHGC of 0.21 or with triple insulated Low E glass with argon fill, which has a U-Factor of 0.29 and SHGC of 0.24.

For hurricane prone coastal areas and weather resistance, choose SL73 with double insulated Impact Low-E Glass on two surfaces with argon fill, which has a U-Factor of 0.32 and SHGC of 0.25, but has the additional protection of Impact Resistance for hurricanes. SL73 meets the Florida Building Code and Dade County for Impact for Missile D test standard.

MR 2 : ENVIRONMENTALLY PREFERABLE PRODUCT
Prerequisite 0.25 point.
Prerequisite + 30% of credits 0.5 point,
Prerequisite + 60% of credits 1 point.
Tropical wood, when used, must be FSC /certified Recycled content can be from any USGBC recognized certification scheme.
NANAWALL SOLUTIONS: NanaWall Red Meranti, European Pine, Spruce and Oak are available to be upgraded as FSC certified wood. Depending on the wood selected, potential contributions include: forestry specialty conservation value, reforestation, timber procurement, economic viability, training and research. NanaWall/Solarlux holds FSC Chain of Custody Certification (certificate SGS-COC-008117). Although not eligible for LEED 2009 credit, NanaWall's Douglas Fir wood has PEFC Chain of Custody Certification (certificate SGS/COC-1188). Both FSC and PEFC certified wood are documented from the certified forest to the end user in a controlled "Chain of Custody" independently verified for adherence to FSC/PEFC standards.

ID 3: INNOVATION OR REGIONAL DESIGN (1-4 points)
NANAWALL SOLUTIONS: NanaWall Operable Glass Walls provide a direct connection to the outdoors, views, occupancy well-being while reducing energy at exemplary levels exceeding Energy Star. Designers are able to reduce the carbon footprint by decreasing the size of the home, while creating flexibility for a larger living space. NanaWall systems also increase the daylight available to the home, thus reducing the need for artificial lighting.

LEED Certified The New American Green Design Home

LEED Silver University of Washington Horticultural Center

NATIONAL GREEN BUILDING STANDARD (ANSI ICC-700-2008)
HOW NANAWALL PRODUCTS MAY CONTRIBUTE

Overview: The National Green Building Standard™ (ANSI ICC-700) is verified by Accredited Verifiers via the NAHB Research Center. It is the industry standard for residential, multi-family / mixed use and renovation projects. Performance Levels for Points are : Bronze (222), Silver (406), Gold (558) and Emerald (697). Projects must meet a minimum threshold in each of Lot Design, Resource Efficiency, Energy Efficiency, Indoor Environmental Quality & Operation/Maintenance/ Education of Building Owner. The Green Remodel Path awards performance levels for reduction of energy and water by 20%, 34%, 43% and 50% for each of the color designations. Builders/ developers seeking certification via the NGBS may apply via www.NAHBGreen.org website and use the "Green Scoring Tool" to see if the home qualifies/apply for verification.

606 RENEWABLE MATERIALS
Intent: Building materials derived from renewable resources
606.2 Wood purchased for NanaWall products available that are certified by ATFS, CSA, FSC, PEFC or SFI.

606.2(2) Major Elements (4 points)
NANAWALL SOLUTIONS: NanaWall woods from sustainable forestry practices include Red Meranti, European Pine, Spruce, Oak and Douglas Fir. Wood makes up approximately 20-30% of the weight of the product (depending on size) and up to 20% of the cost. Forestry source is available for verification process.

610.1 INNOVATIVE PRACTICES
(Manufacturer's environmental management systems)
Intent: Production facility is ISO 14001 certified or equivalent. Product(s) is 1 percent or more of total building cost. (1 point per %).

NANAWALL Solutions: NanaWall / Solarlux both use waterbased (wood) and powdercoated (aluminum) paints, and are completely recycled during the manufacturing process. NanaWall has purchased from sustainable forest for over 15 years. Our innovative packaging is completely recyclable. ISO practices are a way of life for NanaWall. See Section 606 for estimating percent of building cost.

701.4.4.1 FENESTRATION:

Intent: Meets Energy Star values for U-Factor and SHGC (Mandatory)
Table 701.4.4.1

MAXIMUM FENESTRATION SPECIFICATIONS Exterior Doors

Climate Zone	U-Factor	SHGC
All	≤ 0.32	≤ 0.30

NANAWALL Solutions:

NanaWall Operable Glass Walls qualify for Enhanced windows (10-12 credits). NanaWall Operable Glass Walls are available in various glazing options that have NFRC ratings that exceed the Energy Star door performance levels.

Please refer to specific product Performance pages in the binder or on the website for latest information.

Nanawall Operable Glass Walls allow natural sunlight to illuminate interiors, saving energy with passive solar, building orientation and reduced demand on artificial lighting. High performance windows are able to significantly reduce the energy loss through the building envelope. Not only does a high thermal resistance or low U-factor reduce heating loss but the low shading coefficient (SHGC) reduces solar gain and thereby cooling loads. The high visible light transmittance (VT) of glass doors can help reduce lighting loads by allowing more daylight.

NanaWall products can meet Energy Star performance levels, depending on product selected. By using performance simulation modeling it is possible to demonstrate that certain NanaWall Operable Glass Walls are able to alter the simulation model by 8-10%, depending on size and solar orientation.

For coastal areas and extreme weather resistance, choose SL73 with double insulated Impact Low-E Glass on 2 surfaces with argon fill, which has a U-Factor of 0.32 and SHGC of 0.25 but has the additional protection of Impact Resistance for hurricanes. Tested per Florida Building Code and Dade County for Impact for Missile D.

LEED 2009 FOR SCHOOLS New Construction & Major Renovations

The purpose of this document is to help professional designers achieve the highest possible energy efficiency in their building projects. NanaWall product systems can meet testing guidelines of the National Fenestration Rating Council. The following will show you how to maximize project LEED credits through the use of our products to help obtain up to 30 points under the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) for New Construction Program or Existing Building Program. LEED is a consensus based standard useful to manage the development of environmentally responsible buildings. For New Construction, points are awarded in Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials and Resources, Indoor Environmental Quality and Innovation in Design. A LEED NC certified project must obtain a minimum rating of 40 to become certified: certified 40-49, Silver 50-59, Gold 60-79, Platinum 80+ out of 110). Additional information is available through the USGBC @ www.usgbc.org.

All product specifications, Thermal and Performance testing for specific product applications should be obtained from the nanawall.com website or by contacting NanaWall Technical Support info@nanawall.com

SS CR 8: LIGHT POLLUTION REDUCTION (1 point)
CREDIT & INTENT

- Minimize light trespass from the building at night, power to be reduced by 50% or glazing to be shielded.
- Improve visibility through glare reduction.

NANAWALL SOLUTIONS

- Visible light transmission parameters are controlled by glazing and color selection. Interior blinds, glass treatments and switchable glass options are available.
- It may be possible to obtain SS Cr 8 by incorporating select NanaWall products into the building's envelope.

EA CR 1: OPTIMIZE ENERGY PERFORMANCE (1-19 points) (PRESCRIPTIVE 1-3 points)
CREDIT & INTENT

- Design project to comply with ASHRAE 90.1-2007 Option 1: Whole Building Simulation to reduce process & non-process loads by 12% (1 point) to 48% (19 points) over ASHRAE 90.1-2007. Projects in California may use Title 24, 2005, Part 6.
- Option 2: Prescriptive Path: Small buildings may demonstrate compliance with ASHRAE for K-12 Schools (1 point). Prescriptive compliance path using "Advanced Buildings Core Performance" Guide may claim 1 point, plus 2 additional points for implementing Enhanced Performance strategies listed in Section 3.

NANAWALL SOLUTIONS

- NanaWall products allow natural sunlight to illuminate interiors, saving energy with passive solar heat, natural daylighting, and when open, natural ventilation, reducing the demand on HVAC systems and artificial lighting. High performance windows are able to significantly reduce the energy loss through the building envelope. Not only does a high thermal resistance / low U-Factor reduce heating loss, but a low shading coefficient (SHGC) reduces solar gain and cooling loads. A high visible light transmittance (VT) can help reduce lighting loads by contributing more useful daylight.
- NanaWall products can meet Energy Star performance requirements, depending on product selected.
- Potential energy saving strategies include designing the building envelope, HVAC, lighting, and other systems to maximize performance. High performance doors and windows are able to improve the insulative value (which can reduce energy loss)

of the building envelope. Low solar heat gain glazings, such as those used in NanaWall, reduce direct and indirect solar gain from the sun, thereby reducing air conditioning loads.

MR CR 1.1: BUILDING REUSE—MAINTAIN EXISTING WALLS, FLOORS AND ROOF (1-2 points)
CREDIT & INTENT

- To extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

NANAWALL SOLUTIONS

- Existing NanaWall exterior wall systems, not demolished in a renovation project, are reused in place

MR CR 1.2: BUILDING REUSE—MAINTAIN INTERIOR NONSTRUCTURAL ELEMENTS (1 point)
CREDIT & INTENT

- To extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

NANAWALL SOLUTIONS

- Existing NanaWall interior wall systems, not demolished in a renovation project, are reused in place.

MR CR 2.1 / 2.2: CONSTRUCTION WASTE MANAGEMENT (1 or 2 points)
CREDIT & INTENT

- Divert construction waste/ recycle from landfills, 50% (1 point), 75% (2 points)

NANAWALL SOLUTIONS

- NanaWall cardboard shipping crates are made of 60% recycled material, and are 100% recyclable.

MR CR 3: MATERIALS REUSE (1–2 points)
CREDIT & INTENT

- To reuse building materials and products to reduce demand for virgin materials and reduce waste, thereby lessening impacts associated with the extraction and processing of virgin resources.

NANAWALL SOLUTIONS

- NanaWall's components easily disassemble and reassemble to "Use as salvaged... or reused materials."

MR CR 5.1 / 5.2: REGIONAL MATERIALS (1 point for 10% value; 2 points for 20% value)
CREDIT & INTENT:

- Provide materials that are manufactured and extracted within a 500 mile (805 km) radius or the project.

NANAWALL SOLUTIONS

- NanaWall manufactures SL45, SL60, SL70, SL73 and HSW45 products in Richmond, CA 94801.

MR CR 7: CERTIFIED WOOD, 1 POINT

CREDIT & INTENT

- Provide 50% of the wood (based on cost) used on the project are certified in accordance with the USGBC Forest Certification Benchmark. Categories include: Governance, Forest Standard Substance, Chain of Custody & Labeling, and Accreditation & Certification

NANAWALL SOLUTIONS

- NanaWall Red Meranti, European Pine, Spruce and Oak are available as FSC certified wood. Depending on the wood selected, potential contributions include: forestry specialty conservation value, reforestation, timber procurement, economic viability, training and research. NanaWall/ Solarlux holds FSC Chain of Custody Certification (certificate SGS-COC-008117).

Although not eligible for LEED 2009 credit, NanaWall's Douglas Fir wood holds PEFC Chain of Custody Certification (certificate SGS/COC-1188). Both FSC and PEFC certified wood are documented from the certified forest to the end user in a controlled "Chain of Custody" that has been independently verified for adherence to FSC/PEFC standards.

IEQ CR 2: INCREASED VENTILATION, 1 point

CREDIT & INTENT

- Provide additional outdoor ventilation via mechanical or natural ventilation systems.

NANAWALL SOLUTIONS

- NanaWall Operable Glass Walls provide natural ventilation in its open state, assisting in the required natural ventilation to 90% of the occupied spaces per ASHRAE 62.1-2007.

IEQ CR 8.1: DAYLIGHT AND VIEWS: DAYLIGHT 1-3 point

CREDIT & INTENT

- Provide for the building occupants a connection between indoor spaces and the outdoors through the introduction of daylight and views in 75%/90% of the regularly occupied spaces.
- Option 1: Simulation
- Option 2: Prescriptive: Provide side and top lighting to achieve 25 footcandles in at least 75% (1 point) and 90% (2 points)

NANAWALL SOLUTIONS

- NanaWall Operable Glass Walls provide a view for the entire wall, not just a small-framed window (2% minimum glazing), creating more interior daylight. Strategies to consider include building orientation, increased building perimeter, and visible light transmittance (VT) increase as part of the window to floor area ratio (WFR) and use of high performance glazing. NanaWall systems under 70% of the ceiling height qualify for Top-Lighting Zone under the Prescriptive Method.

IEQ CR 8.2: DAYLIGHT AND VIEWS: VIEWS 1 point

CREDIT & INTENT

- Achieve direct line of sight to the outdoor environment via perimeter vision glazing between 30” and 90”above finish floor for building occupants in 90% of all regularly occupied spaces perimeter vision glazing.

NANAWALL SOLUTIONS

- NanaWall systems offer a full wall with exterior views when closed, and the flexibility to completely open for a direct/ interactive connection with the exterior environment.

IEQ CR 9: ENHANCED ACOUSTICAL PERFORMANCE, 1 point
CREDIT & INTENT

• Design classrooms and other core learning spaces to meet the Reverberation Time (RT) and Impact Insulation Class (IIC) requirements of ANSI Standard S12.60-2002, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools. Also design classrooms and other core learning spaces to meet the Sound Transmission Class (STC requirements, excepting windows, which must meet an STC rating of at least 35.

NANAWALL SOLUTIONS

- NanaWall Operable Glass Wall SL60, SL70 and SL80/81, with specialty laminated insulated glazing can achieve an STC rating of up to 43 and an OITC rating of 32. They are sealed/ weather-resistant suitable for exterior use, but in interior applications can provide flexible classroom space and minimum sound transmission. HSW60 with specialty laminated insulated glazing can achieve an STC of up to 43. WD65 and SL45 with specialty glazing have an STC of 36-38. Designers can achieve the maximum threshold under Option 1: Using the methodology described in Standard S12.60-2002, achieve a maximum unoccupied background noise level in classrooms and other primary learning spaces.

ID CR 1: INNOVATION (1-4 pt)
CREDIT & INTENT

- Exemplary energy performance, school as teaching tool, or integrations of sustainable features not included above.

- Path 1: Innovation in Design (1-4 pt) Measurable environmental performance.

- Path 2: Exemplary Performance (1-3 pt) Exemplary Performance in existing category for the next higher incremental percentage.

NANAWALL SOLUTIONS

- NanaWall products not only exceed thermal performance at levels eligible for exemplary credit, but also provide innovative ways for operable glass walls that can provide increased ventilation, thermal comfort while decreasing the need for grid based power.
- NanaWall Operable Glass Walls placed strategically can achieve daylighting in 95% of occupied spaces and may qualify for

Exemplary Performance.

- NanaWall products allow the designer to create a smaller carbon footprint by using smaller square footage. The Operable glass wall allows the design of combination indoor-outdoor spaces, divisions of classroom into multiple spaces, enhanced acoustical performance, ventilation, thermal comfort and daylighting all in one product

LEED 2009 For New Construction & Major Renovations (NCMR)

The purpose of this document is to help professional designers achieve the highest possible energy efficiency in their building projects. NanaWall product systems can meet testing guidelines of the National Fenestration Rating Council. The following will show you how to maximize project LEED credits through the use of our products to help obtain up to 30 points under the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) for New Construction Program or Existing Building Program. LEED is a consensus based standard useful to manage the development of environmentally responsible buildings. For New Construction, points are awarded in Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials and Resources, Indoor Environmental Quality and Innovation in Design. A LEED NC certified project must obtain a minimum rating of 40 to become certified: certified 40-49, Silver 50-59, Gold 60-79, Platinum 80+ out of 110). Additional information is available through the USGBC @ www.usgbc.org.

All product specifications, Thermal and Performance testing for specific product applications should be obtained from the nanawall.com website or by contacting NanaWall Technical Support info@nanawall.com

SS CR 8: LIGHT POLLUTION REDUCTION, 1 POINT

CREDIT & INTENT

- Minimize light trespass from the building at night, power to be reduced by 50% or glazing to be shielded.
- Improve visibility through glare reduction.

NANAWALL SOLUTIONS

- Visible light transmission (VT) parameters are controlled by glazing and color selection. Interior blinds, glass treatments, and switchable glass options are available.
- It may be possible to obtain SS Cr 8 by incorporating select NanaWall products into the building's envelope.

EA CR 1: OPTIMIZE ENERGY PERFORMANCE, 1-19 POINTS (PRESCRIPTIVE 1+ 1-3 PT)

CREDIT & INTENT

- Design project to comply with ASHRAE 90.1-2007 Option 1: Whole Building Simulation to reduce process & non-process loads by 12 (1 point) -48% (19 point) over ASHRAE 90.1-2007. Projects in California may use Title 24, 2005, Part 6.
- Option 2: Prescriptive Path: Small buildings may demonstrate compliance with ASHRAE for Small Buildings 2004, ASHRAE for Small Retail 2006 or ASHRAE for Small Warehouses 2008 for 1 point. Prescriptive compliance path using "Advanced Buildings Core Performance" Guide may claim 1 point, plus 2 additional points for implementing Enhanced Performance strategies listed in Section 3.

NANAWALL SOLUTIONS

- NanaWall products allow natural sunlight to illuminate interiors, saving energy with passive solar heat, natural daylighting and when open, natural ventilation reducing demands on HVAC systems and artificial lighting. High performance windows are able to significantly reduce the energy loss through the building envelope. Not only does a high thermal resistance / low U-Factor reduce heating loss, but a low shading coefficient (SHGC) reduces solar gain and thereby cooling loads. A high visible light transmittance (VT) can help reduce lighting loads by contributing more useful daylight.
- NanaWall products meet Energy Star performance requirements, depending on product selected.
- Potential energy saving strategies include designing the building envelope, HVAC, lighting, and other systems to maximize system performance. High performance doors and windows are able to improve the insulative value (which can reduce

energy loss) of the building envelope. Low solar heat gain glazings, such as those used in NanaWall, reduce direct and indirect solar gain from the sun, thereby reducing air conditioning loads.

MR CR 1.1: BUILDING REUSE—MAINTAIN EXISTING WALLS, FLOORS AND ROOF (1-2 points)
CREDIT & INTENT

- To extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

NANAWALL SOLUTIONS

- Existing NanaWall exterior wall systems, not demolished in a renovation project, are reused place.

MR CR 1.2: BUILDING REUSE—MAINTAIN INTERIOR NONSTRUCTURAL ELEMENTS (1 point)
CREDIT & INTENT

- To extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

NANAWALL SOLUTIONS

- Existing NanaWall interior wall systems, not demolished in a renovation project, are reused in place.

MR CR 2.1 / 2.2: CONSTRUCTION WASTE MANAGEMENT (1 or 2 points)
CREDIT & INTENT

- Divert construction waste/ recycle from landfills, 50% (1 point), 75% (2 points)

NANAWALL SOLUTIONS

- NanaWall cardboard shipping crates are made of 60% recycled material and are 100% recyclable.

MR CR 5.1, 2: REGIONAL MATERIALS (1 point for 10% value, 2 points for 20% value)
CREDIT & INTENT:

- Provide materials that are manufacturer and extracted with a 500 mile (805 km) radius or the project.

NANAWALL SOLUTIONS

- NanaWall manufactures SL45, SL60, SL70, SL73 and HSW45 products in Richmond, CA 94801.

MR CR 3: MATERIALS REUSE (1–2 points)
CREDIT & INTENT

- To reuse building materials and products to reduce demand for virgin materials and reduce waste, thereby lessening impacts associated with the extraction and processing of virgin resources.

NANAWALL SOLUTIONS

- NanaWall's components easily disassemble and reassemble to "Use as salvaged... or reused materials."

MR CR 7: CERTIFIED WOOD, 1 point

CREDIT & INTENT

- Provide 50% of the wood (based on cost) used on the project are certified in accordance with the USGBC Forest Certification Benchmark. Categories include: Governance, Forest Standard Substance, Chain of Custody & Labeling, and Accreditation & Certification.

NANAWALL SOLUTIONS

- Red Meranti, European Pine, Spruce and Oak are available as FSC certified wood. Depending on the wood selected, potential contributions include: forestry specialty conservation value, reforestation, timber procurement, economic viability, training and research. NanaWall/Solarlux holds FSC Chain of Custody Certification (certificate SGS-COC-008117).
  Although not eligible for LEED 2009 credit, NanaWall's Douglas Fir wood holds PEFC Chain of Custody Certification (certificate SGS/COC-1188). Both FSC and PEFC certified wood are documented from certified forest to the end user in a controlled "Chain of Custody" that has been independently verified for adherence to FSC/PEFC standards.

IEQ CR 2: INCREASED VENTILATION (1 point)

CREDIT & INTENT

- Provide additional outdoor ventilation via mechanical or natural ventilation systems.

NANAWALL SOLUTIONS

- NanaWall Operable Glass Walls can provide natural ventilation in its open state, assisting in the required natural ventilation to 90% of the occupied spaces per ASHRAE 62.1-2007.

IEQ CR 8.1: DAYLIGHT AND VIEWS: DAYLIGHT (1 point)

CREDIT & INTENT

- Provide for the building occupants a connection between indoor spaces and the outdoors through the introduction of daylight and views in 75% of the regularly occupied spaces.
- Option 1: Simulation
- Option 1: Prescriptive: Provide glare control devices or top lighting.

NANAWALL SOLUTIONS

- NanaWall Operable Glass Walls provide a view for the entire wall, not just a small-framed window, creating more interior daylight. Strategies to consider include building orientation, increased building perimeter, and visible light transmittance (VT) increase as part of the window to floor area ratio (WFR) and use of high performance. NanaWall systems under 70% of the ceiling height qualify for Top-Lighting Zone under the Prescriptive Method.

IEQ CR 8.2: DAYLIGHT AND VIEWS: VIEWS, 1 point

CREDIT & INTENT

- Achieve direct line of sight to the outdoor environment via perimeter vision glazing between 30” and 90” above finish floor for building occupants in 90% of all regularly occupied spaces.

NANAWALL SOLUTIONS

- NanaWall systems offer a full wall with exterior views when closed, and the flexibility to completely open for a direct/interactive connection with the exterior environment.

ID CR 1: INNOVATION (1-5 points)

CREDIT & INTENT

- Exemplary energy performance, school as teaching tool, or integrations of sustainable features not included above.
- Path 1: Innovation in Design (1-5 points) Measurable environmental performance.
- Path 2: Exemplary Performance (1-3 points) Exemplary Performance in existing category for the next higher incremental percentage.

NANAWALL SOLUTIONS

- NanaWall products not only exceed thermal performance at levels eligible for exemplary credit, but also provide innovative ways for operable glass walls that can provide increased ventilation, thermal comfort while decreasing the need for grid based power.
- NanaWall Operable Glass Walls placed strategically can achieve daylighting in 80% of occupied spaces and may qualify for Exemplary Performance.
- NanaWall products allow the designer to create a smaller carbon footprint by using smaller square footage. The Operable glass wall allows the design of combination indoor-outdoor spaces divisions of classrooms into multiple spaces, enhanced acoustical performance, ventilation, thermal comfort and daylighting all in one product.

LEED v 4 for BUILDING DESIGN AND CONSTRUCTION (BD&C)

BD&C - EA CR 2 : OPTIMIZE ENERGY PERFORMANCE (1–20 points)
CREDIT & INTENT
•To achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic harms associated with excessive energy use.

NANAWALL SOLUTIONS
•NanaWall systems using low U-factor designed double or triple IGU and thermally broken frames can provide significant energy performance.

BD&C - MR CR 1 : BUILDING LIFE-CYCLE IMPACT REDUCTION
OPTION 3 - BUILDING AND MATERIAL REUSE (1–4 points BD&C, 1-5 points Core and Shell)
CREDIT & INTENT
•. .To encourage adaptive reuse and optimize the environmental performance of products and materials.
•Option 3: Reuse or salvage building materials from off site or on site as a percentage of the surface area.

NANAWALL SOLUTIONS
•NanaWall systems can be easily disassembled for salvage and reuse.

BD&C - EQ CR 7 : DAYLIGHT (1–3 points)
CREDIT & INTENT
•To connect building occupants with the outdoors, reinforce circadian rhythms, and reduce the use of electrical lighting by introducing daylight into the space.

NANAWALL SOLUTIONS
•NanaWall glass wall assembly borrowed light brings daylight deeper into the floor plate.

BD&C - EQ CR 8 : QUALITY VIEWS (1–2 points)
CREDIT & INTENT
•To give building occupants a connection to the natural outdoor environment by providing quality views.

NANAWALL SOLUTIONS
•NanaWall glass wall assemblies provide direct outdoor lines of sight.

BD&C - EQ CR 9 : ACOUSTIC PERFORMANCE (1–2 points)
CREDIT & INTENT
•To provide workspaces and classrooms that promote occupants' well being, productivity, and communications through effective acoustic design.

NANAWALL SOLUTIONS

•NanaWall Operable Glass Wall SL60, SL70 and SL80/81, with specialty laminated insulated glazing can achieve an STC rating of up to 43 and an OITC rating of 32. They are sealed/ weather-resistant suitable for exterior use, but in interior applications can provide flexible classroom space and minimum sound transmission. HSW60 with specialty laminated insulated glazing can achieve an STC of up to 43. WD65 and SL45 with specialty glazing have an STC of 36-38. Designers can achieve the maximum threshold under Option 1: Using the methodology described in Standard S12.60-2002, achieve a maximum unoccupied background noise level in classrooms and other primary learning spaces.

LEED v 4 for INTERIOR DESIGN AND CONSTRUCTION (ID&C)

ID&C EA CR 2: OPTIMIZE ENERGY PERFORMANCE
- OPTION 2. PRESCRIPTIVE COMPLIANCE (1–16 points)
CREDIT & INTENT
•To achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic harms associated with excessive energy use.
•Option 2 - Building Envelope, Glazing (2 points) : Comply with the recommendations in the appropriate ASHRAE 50% Advanced Energy Design Guide for all vertical fenestration.

NANAWALL SOLUTIONS
•Option 2 : NanaWall systems using low U-factor designed double or triple IGU glazing and thermally broken frames can provide significant energy performance that meet the Thermal Transmittance of U-0.65 and SHGC of 0.25 ASHRAE AEDG requirements.

ID&C - MR CR 1 : INTERIORS LIFE-CYCLE IMPACT REDUCTION
•OPTION 1 - INTERIORS REUSE (2 points)
AND/OR
•OPTION 3. DESIGN FOR FLEXIBILITY (1 point ID&C, 2 points Retail CI)
CREDIT & INTENT
•. .To encourage adaptive reuse and optimize the environmental performance of products and materials.
•Option 2 : Reuse or salvage interior nonstructural elements for at least 50% of the surface area.
•Option 3: Design at least 50% of interior nonstructural walls, ceilings, and floors to be movable or demountable.

NANAWALL SOLUTIONS
•Option 2 : NanaWall systems can be easily disassembled for salvage and reuse.
•Option 3 : NanaWall provides moveable wall systems and systems that are demountable.

ID&C - EQ CR 7 : DAYLIGHT (1–3 points)
CREDIT & INTENT
•To connect building occupants with the outdoors, reinforce circadian rhythms, and reduce the use of electrical lighting by introducing daylight into the space.

NANAWALL SOLUTIONS
•NanaWall glass wall assembly borrowed light brings daylight deeper into the floor plate.

ID&C - EQ CR 8 : QUALITY VIEWS (1–2 points)
CREDIT & INTENT
•To give building occupants a connection to the natural outdoor environment by providing quality views.

NANAWALL SOLUTIONS
•NanaWall glass wall assemblies provide direct outdoor lines of sight when used as borrowed lites.

ID&C - EQ CR 9 : ACOUSTIC PERFORMANCE (1–2 points)

CREDIT & INTENT

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NANAWALL SOLUTIONS

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