

2 copies

MINI AUDIT

FOR THE

CITY OF BLOOMINGTON

RCIII

rieke carroll muller associates inc

architects engineers land surveyors planners FEBURARY, 1981 RCM JOB NO. 801704

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DRED SCOTT SKATING SHELTER PUBLIC HEALTH BUILDING DWAN GOLF COURSE PUMP HOUSE BROOKSIDE PARK SHELTER BRYANT PARK SHELTER BRYE PARK SHELTER BUSH LAKE BEACH HOUSE DRED SCOTT BALLFIELD SHELTER MOIR PARK SHELTER # 2 POPLAR BRIDGE PARK SHELTER **RIVERSIDE PARK SHELTER** RUNNING PARK SHELTER SMITH PARK SHELTER SOUTH GLEN PARK SHELTER TARNHILL PARK SHELTER **ARNIE JOHNSON FIELD HOUSE** VALLEY VIEW SWIMMING POOL WESTWOOD PARK SHELTER RIVER RIDGE PARK SHELTER

MINI-AUDIT REPORT

_							
A	BUILDING NAME			NAME	OF ORGANIZATIC	N .	DATE
	Dred Scott Skating Shelter				ity of Bloom	9/30/80	
	BUILDING ADDRESS			ADDRESS			
	7901 West 108th Street	7901 West 108th Street			215 West 01c	i Shakopee Ro	bad
	CITY	ZIP CO	DDE	CITY			ZIP CODE
AC.	Bloomington, MN	55	5431	B	loomington,	MN	55431
TA	PERSON COMPLETING FORM	TELEP	HONE	CONT	ACT PERSON		TELEPHONE
U ů ů	Randy Smith	93	35-6901	Ar	rthur Jenser	า	881-5811
•		1		.			
B	Instructions: For blocks 1 and 2 check the box	which be	est fits the building	g owner:	ship conditions. For	block 3 determine whi	ch of the four categories
		38	SCHOOLS		gory benning the b		
	XOPublic (PUB)	0 4.	Elementary		(SCHL-ELM)		(LOCG-OFFC)
	UNon-Profit Association (NAP)		□ Secondary □ Coll. or Univ		(SCHL-SECD) (SCHL-POST)	∐ Storage 12 MService	(LOCG-STRG) (LOCG-SERV)
					(SCHL-VOCL)	Library	(LOCG-LBRY)
	2. ULTIMATE OWNER		Education Ag	gency	(SCHL-ADMN)		(LOCG-PLCE)
ğ	XQCity (CITY)			<i>,</i> ,,,	(SCHL-OTHR)	DOTHER	(LOCG-OTHR)
8	Downship (TOWN)	ь					· · · · ·
υÈ	UState (STAT)	0.		ne	(PBCR-NURS)	d. HOSPITALS	(HOSP-GENL)
N N	Private School (PRSC)		Long Term C	are		Tuberculosi	s (HOSP-TUBR)
190	UNOn-Profit Association (NPAP)		DPublic Health	n Ctr.	(PBCR-HCTR)	UOTHER	(HOSP-OTHR)
2 2 2 2 2 2			Res. Child Ci	are Ctr.	(PBCR-RCCC)		
	If eligible for both Federal and State Funding: Have you received a mini-audit grant before Have you previously applied for mini-audit funding Date	? Yı unding? ? Yı ? Yı unding? g? Yı unding? g? Y	es No VYes No es XX No es XX No es XX No es No yes No se additional she	ets if ne	ecessary.)	ed and dated by the f	rai and State funding or lead of the organization
				•			
6							
ST							
UE,	_						
Ö	Date			-			
501	Name						
NAC		·····					
NIN	Signature.						
2 u							

Check the type of energy report which was completed and submitted prior to this mini-audit report.

Elementary School Energy Report (Form No. ED-00444-02)

Secondary School Energy Report (Form No. ED-00445-02)

D

ENERGY REPORT CHECK-OFF

E

XX Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities. listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K	did not	save at least
20% of the building's energy consumption as specified in section I.	(did, did not)	

Based upon my observation of the physical characteristics of this building and the building's major energy using systems. I recommend that this should should not be the subject of a maxi-audit.

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section E. I recommend that this building	should not
	(should, should not)
undergo further solar conversion analysis, and/orSNOUID_NOTundergo further analysis of the	renewable resources waste

wind, wood, (Circle proper resources) (should, should not)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Mini-Auditor's Name (Print or Type)	
Kangly Anot	206
Signature//	
Rieke Carroll Muller Asso	c., Inc.
Firm Name (if none, enter none)	
PO Box 130 Hopkins, MN	55343
Address	
(612) 935-6901	
Phone	
September 30, 1980	
Date	

Witnessed by:

Building Organizational Authority (Print or Type)

Signature

Date

MINI-AUDIT STATEMENTS

F	NAME	POSITION	ORGANIZATION					
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.					
	Dave Elzea	Building Maintenance	City of Bloomington					
AUDIT TEAM		· · · · · · · · · · · · · · · · · · ·						
G	BRIEF DESCRIPTION OF GEN Good, Warming H	ERAL BUILDING CONDITION (i.e. type, and function of the state of the s	on)					
N	MAJOR CHANGES PLANNED	WITHIN NEXT 15 YEARS (i.e. demolition, rehabilita	tion, conversion from one building type to another)					
DING	STRUCTURAL COMPONENTS Wooden Rafters	OF ROOF (i.e. metal beams, wooden rafters, concr	ete)					
BUIL	ROOFING MATERIAL (i.e. tar a Shingles	and gravel, shingles, tile)						
H	INSTRUCTIONS: Correctly ans	wer the following questions for the building being r	nini-audited.					
	Is there open land adjacent to t	the building?						
	Solar collectors need to be locat 3 p.m.? Roof: XXYes □ No South facing Wall: XXYes	ed in an unshaded area. Is the roof of the building and No	the south facing wall unshaded between the hours of 9 a.m. and					
	If the roof or wall are partly shows of roof unshaded	aded, what percentage of the surface is unshaded? % ded%						
	What is the overall shape of the square XØ rectangle	e building? H-shaped						
	Is the roof of the building flat o □ flat XX pitched	or pitched?						
	If pitched, what is the compass	orientation of the ridgeline? <u>Varies wit</u>	h building location.					
	If pitched, what is the angle that the roof makes with horizontal?							
	Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?							
	What is the exterior facing mai	erial for the south facing wall?WOOD	Siding					
Ĩ	What percentage of the south	facing wall is glass?%						
	Is the building's space heating XX Yes □ No	equipment located within or on the building? (A no	answer indicates the equipment is in a separate building.)					
205	If the space heating equipmen XX Ground Floor □ Basem	t is inside the building, where is it located? hent	Jnit Heater					
ENTIAL	Is the building's water heating Yes No None	equipment located within the building? (A no answ	er indicates the equipment is in a separate building.)					
R POTI	If the water heating equipmen Ground Floor Basen	t is inside the building, where is it located? NOI	ne					
SOLA	Is the water heating system a □ Central □ Multiple □	central system, does it consist of multiple units, or i Combination	s it a combination of the central and multiple units?					
	+Thic is and of		·					

This is one of sixteen warming houses. They are all exactly the same, this report is to be used for all of them. Instructions. Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

	BASE PER	NOD YEAR	Fiscal Year
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			
		L.	- los

		20% SAVIN	IGS YEAR	Fiscal Year
	ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
	Electricity			
S	Fuel 1			
AVING	Fuel 2			
20% S DATA	TOTAL			

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

Check two boxes in each category —							
Range of Electrical Savings -	_ X(X) 0%	X <u>X</u> 5%	□ 10%	□ 15%	□ 20%	□ 25%	other (specify)
Range of Fuel Savings —	□ 0%	XCX 5%	XX 10%	□ 15%	□ 20%	25%	other (specify)

Calculate ranges of energy and cost savings -

Range of Electrical Savings

:	% Range lower bound % x	Annual Electrical Consumption 2777 * kwh =	Range of Energy Savings % Range kwh,% x	Annual Electrical Dollars Spent \$	
	to upper bound <u>5 </u>	2777 * kwh =	to to 138.9 kwh, <u>5</u> % x	<u>\$ 154.18</u> = <u>\$ 7.71</u>	
3			Range of Fuel Savings		
	% Range	Annual Fuel Consumption 13 <u>.3x10⁶ *</u> Btu =	$\begin{array}{ccc} \text{Range of Fuel} & & \\ & \text{Savings}_4 & & \\ & 66.4 \text{x} 10 & \\ & \text{Btu,} & 5 & \\ & & \text{x} \end{array}$	Annual Fuel Dollars Spent \$67.99 = \$3.40	
VGS	upper bound <u>10</u> % x	13 <u>.3x10⁶ *</u> Btu =	13.3×10^{5} Btu, 10° x	$\frac{67.99}{5.80} = \frac{6.80}{5.80}$	
SAVI	The mini-auditor is not respons not fall between the roughly es	sible if actual savings resultin stimated ranges which are s	g from the implementation of the energ	y conservation opportunities listed in section I do)

* Figures are the mean of all sixteen buildings

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification action scheme for energy conservation opportunities listed on pages 25 through 37. This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.

				OPTIONAL: OPTIONAL:					
ITEM NO.		ICATION	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST	DATE OF IMPLEMENTATION			
	CLASS	CLASS			SAVINGS				
			_						
	+								
~	+								
	1								
					<u> </u>				
	1				1				
	+								
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	+	1							
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L		1							

Note Reproduce this page as necessary

K

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

				OPTIONAL:	OPTIONAL	
	CLASSIFICATION				ENERGY	
ITEM	N	O. NEW MINI-AUDIT OPPORTUNITIES		ENERGY	COST	DATE OF IMPLEMENTATION
NO.	MAJOR	SUB		SAVINGS	SAVINGS	
	L CLASS	CLASS	₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩			
			Keep all controls free of dust.			
2	2	1	Check the amount of insulation in			
			the ceiling	a na an	and the second	
			one cerring.			
3	2		Add insulation in attic spaces if			
			needed.			
4	2	8	Insulate walls with rigid insulation			
	<u>+</u>	<u> </u>	insulace walls with right insulation			
			on inside and/or outside surfaces,			
	ļ		or place loose fill insulation in			
			wall cavities if needed.			
-	l			}	1	1
	1				1	
5	3		Check the calibration of all			
	+		controllers and devices for proper	<u> </u>	+	
			controllers and encustions			
			sectings and operations.			and the second
R	1				1	
6	2	1	65 ⁰ E maximum occupied 60 ⁰ E maximum			
<u> </u>	<u> </u>	<u>↓</u>	Una subject during the besting			
			unoccupied during the heating			
ų			season.			
and the second s	1					
7	3	2	Overhead unit heaters should direct			
<u> </u>	+	<u> </u>	heat to floors			
2						
8	3	3	Make sure that all fans, frequently			
		1	inoperative in unit heaters, fan	1		
			coil units, and unit ventilators			
<u>,</u>	+	1	are running normally to increase	+	+	
			the best therefore usta from bestime			
	+	+	ine near transfer rate from neating			
			C0115.	1		
L						
9	4	1	Instruct occupants and maintenance		1	
		1	personnel to switch off all lights	+		
			when they are not needed		1	1
	+		when they are not needed.	+	+	
ľ		1			1	1
	1					
t						
10	4	3	Clean fixtures and lamps regularly.			
1	1	+			**************************************	
				1		
	1	1			1	

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

	· • • • • • • • • • • • • • • • • • • •			OPTIONAL:	OPTIONAL	
	CLASSIF	ICATION	ON		ENERGY	
ITEM NO.	MAJOR CLASS	U. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	COST SAVINGS	DATE OF IMPLEMENTATION
11	4	3	Replace lamps in groups before they			
			burn out to maintain higher		ang pang mang pang pang pang pang pang pang pang p	
			average light output per fixture.			
12	4	4	Use lower wattage lamps to provide			
	1		the necessary illumination.			
13	Δ	Λ	Allow part of a lighting system to			
	+		be turned off, while maintaining	······································		
			the necessary light.			
14	5	1	Keep records of the operating			
<u> </u>			and purchase of any new equipment			
	+	<u> </u>	that affects energy consumption of		+	
1			records will indicate the impact			
i	1	<u>}</u>	of energy conservation measures.	1		and the second
	ļ					
15	5	1	Review the record books on a			
			regular basis.			
16	7	3	If the firing rate of gas burners			
			is too high, it causes short cycling and excessive fuel			
1			consumption. Too low a rate require constant operating and delivers	5		
1	1		inadequate heat to the spaces.			
17	7	3	Turn off gas pilots for furnaces.			
			boilers, and space heaters during the non-heating months and during	1		
1	1	1	long unoccupied periods.	1		
18	7	2	Keen all heat exchanger surfaces	†		
	1		clean on unit heaters. Check air-	1		
				<i>v</i> ∙ 	+	
		+	Follow guidelines suggested for	+		an a
19	7	3	fan and motor maintenance.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW COPPORTUNITIES

MINI-AUDIT REPORT

FORM NO. MIN-01

A	BUILDING NAME Public Health Building		NAME OF ORGANIZATION City of Bloomington	DATE 9/30/80				
	BUILDING ADDRESS 10100 Morgan Avenue South		ADDRESS 2215 West Old Shako	pee Road				
CT	CITY Bloomington, MN	ZIP CODE 55431	CITY Bloominaton, MN	zip code 55431				
ATA	PERSON COMPLETING FORM	TELEPHONE	CONTACT PERSON	TELEPHONE				
ŭå	Randy Smith	935-6901	Arthur Jensen	881-5811				
·			a a mang di Samanan ang a kang manang mang mang mang mang mang mang					
B	Instructions: For blocks 1 and 2 check the box describes the building type and then within the	which best fits the buildin he category check off the	g ownership conditions. For block 3 dete sub category befitting the building fund	ermine which of the four categories stion.				
		3a. SCHOOLS	c. LOC	AL GOVERNMENT				
	⁷ ビアublic (PUB) ロNon-Profit Association (NAP)	Elementary Secondary	(SCHL-ELM) ロの (SCHL-SECD) 目的 (SCHL-POST) 初名	fice (LOCG-OFFC) orage (LOCG-STRG) ervice (LOCG-SERV)				
			(SCHL-VOCL) DLi gency (SCHL-ADMN) DP	brary (LOCG-LBRY) blice (LOCG-PLCE)				
۳ ۵	County (CNTY)		on (SCHL-ADMN) DFi (SCHL-OTHR) DO	re (LOCG-FIRE) THER (LOCG-OTHR)				
5	□Township (TOWN) □State (STAT)	b. PUBLIC CARE	d. HOS	PITALS				
N N	Public School (PUSC)	UNursing Hon	ne (PBCR-NURS) Care (PBCR-TERM) DT	eneral (HOSP-GENL) (HOSP-TUBR)				
10 10 10 10	□Non-Profit Association (NPAP) □Indian Tribe (INDN)	Rehab. Facil	ity (PBCR-RHAB) OO	THER (HOSP-OTHR)				
โยยา		Res. Child C	Care Ctr. (PBCR-RCCC)					
1								
C	Instructions: With reference to page 23 entitle just Federal funding, then answer the question	d Funding Information, d as correctly for the situation	etermine if the facilities are eligible for on. This section must be signed and date	both Federal and State funding or ed by the head of the organization				
	Have you received a mini-audit grant befors Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date	a? □ Yes XON No funding? XDA Yes □ No ? □ Yes XOX No	-					
	Name [*]							
	Signature.		-					
	If eligible for Federal funding only Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit fundin	e? □Yes□No funding? □Yes □No a? □Yes □No						
	The 50% match for Federal funds will come	from: (Use additional she	eets if necessary.)					
l Ny sa k								
ST								
EQUE	Date		-					
IG RI	Name							
NION	Signature		-					
Ĩ.	Signature.		-					

Check the type of energy report which was completed and submitted prior to this mini-audit report.

□ Elementary School Energy Report (Form No. ED-00444-02) □ Secondary School Energy Report (Form No. ED-00445-02) ☆ Existing Building Energy Report (Form No. EN-00041-01)

D

ENERGY REPORT

E

MINI-AUDIT

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not save at least 20% of the building's energy consumption as specified in section I.

Based upon-my observation of the physical characteristics of this building and the building's major energy using systems. Frecommend that this should not be the subject of a maxi-audit.

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section F and the informa-	ation referred to in section F	I recommend that this building	Shourd not	
		, recommend that the building -	(should, should not)	
undergo further solar conversion analysis, and/or	should not	undergo further analysis of the r	renewable resources	waste
wind, wood. (Circle proper resources)	(should, should not)			

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Mini-Auditor's Name (Print/or Type)	
Kandof Smith	206
Signature 0	
Rieke Carroll Muller As	ssoc., Inc.
Firm Name (if none, enter none)	
PO Box 130 Hopkins,	MN 55343
Address	anna a fha fhaillean a cun airte ann an Fhaille ann a bha ann an tha ann an tha ann an tha ann an tha ann an a
(612) 935-6901	
Phone	
September 30, 1980	
O .	

Witnessed by:

Building Organizational Authority (Print or Type)

should not

Signature

Date

F	NAME	POSITION	ORGANIZATION									
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc									
	Dave Elzea	Building Maintenance	City of Bloomington									
UDIT EAM		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·									
4												
G	BRIEF DESCRIPTION OF GEN Good, Medical (IERAL BUILDING CONDITION (i.e. type, and functi	on)									
	MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)											
Z	None											
ATIC	STRUCTURAL COMPONENTS	S OF ROOF (i.e. metal beams, wooden rafters, concr	ete)									
WOODEN Katters 96 ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)												
INF I	Shingles											
H	INSTRUCTIONS: Correctly an	swer the following questions for the building being i	nini-audited.									
	Is there open land adjacent to the building? 版Xyes □ No											
	Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.? Roof: XXYes INO South facing Wall: XXYes INO											
	If the roof or wall are partly sh % of roof unshaded % of south facing wall unsha	aded, what percentage of the surface is unshaded? % aded%										
	What is the overall shape of th	e building?] H-shaped □ E-shaped □ other (specify)										
	Is the roof of the building flat flat XX pitched	or pitched?	L 11									
	If pitched, what is the compas-	s orientation of the ridgeline? Eas	t - West									
	If pitched, what is the angle th	at the roof makes with horizontal? 40 \circ										
- 1	Are there large obstructions of Ves X I No	n the roof such as chimneys, rooms for mechanical	equipment, ventilating units, water towers, etc?									
	What is the exterior facing ma	terial for the south facing wall?STUC	CO									
	What percentage of the south	facing wall is glass? $\underline{15}$ %										
	Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.) X I Yes □ No											
	If the space heating equipmen	t is inside the building, where is it located? nent										
ENTIAL	ls the building's water heating Ⅻ Yes □ No	equipment located within the building? (A no answ	er indicates the equipment is in a separate building.)									
RMATIC	If the water heating equipmen Ground Floor XXI Baser	t is inside the building, where is it located? nent										
SOLA	Is the water heating system a ØKCentral □ Multiple □	central system, does it consist of multiple units, or i Combination	s it a combination of the central and multiple units?									

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

	BASE PER		Fiscal Year
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			
	20% SAVIN	IGS YEAR	Fiscal Year
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
τοται			

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

	Check two boxes in each category				1		
	Range of Electrical Savings — X🛛 0%	XX 5%	□ 10%	□ 15%	□ 20%	□ 25%	other (specify)
	Range of Fuel Savings — 🛛 0%	XIX 5%	X X 10%	□ 15%	□ 20%	□ 25%	Dother (specify)
2	Calculate ranges of energy and cost savi	ngs —					

Calculate ranges of energy and cost savings -

SAVINGS

Range of Electrical Savings Range of Electrical Annual Electrical Range of Energy Annual Electrical % Range % Range **Dollars Savings** Consumption **Dollars Spent** Savings 29418 0 0 0 0 s 1339.85 kwh lower bound to to to to 5 29418 1480.9 5 **1**339.85 66.99 upper bound kwł 3 Range of Fuel Savings Annual Fuel Range of Fuel Annual Fuel Range of Fuel Savings % Range Consumption % Range **Dollars Spent** Dollars Savings ,715.54 5 26.9x10 13.5x10 5 35.78 lower bound Bt Btu 106 SAVINGS to to 26.9x1 to to 26.9x1 10 10 71.55 715.54 upper bound The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.

	<u> </u>		OPTIONAL: OPTIONAL:							
ITEM NO.	CLASSIN MAJOR CLASS	ICATION O. SUB CLASS	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION				
1	7	3	New Furnace			1978				
2	2	1	Added 12" insulation in attic.			Fall, 1979				
3	2	6	New Roof			Fall, 1980				
4	2	2	New Exterior Doors			Fall, 1979				
······································										
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Note Reproduce this page as necessary

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NEW DPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

	Lou coort	0.0		OPTIONAL:	OPTIONAL	
ITEM		ICATION 0.		ENERGY	ENERGY	DATE OF IMPLEMENTATION
NO.	MAJOR CLASS	SUB CLASS		SAVINGS	SAVINGS	
]	1	1	Keep all controls free of dust.			
2	2	2	Keep all doors between unheated corr and heated spaces closed.	idors		
3	2	2	Add storm doors.			
4	2	3	Clean windows so more sunlight shine through them during the heating	5		
			season.			
5	2	3	When the winter sun is not shining through the windows, draw the drapes			
and from the surgery of the surgery			or blinds to reduce effective heat			
6	2	8	Caulk all cracks that allow air and moisture into the building.			
7	2	10	Inspect window closing and locking devices to insure a tight window.			
8	3	1	Check operation of entire heating/ cooling control system, including			
_			control valves and dampers.			
9	3	1	Check the calibration of all control and devices for proper settings and	lers		
			opeations.			
10	3	1	Shut off registers in vestibules and lobbies.			
11	3	1	Raise the supply air temperature for cooling to the highest point necessa	ry		
			to provide minimum required cooling.			
12	3	1	Lower the supply air temperature for heating to the lowest point			
			necessary to provide minimum require heating	:di		
13	3	1	Whenever condensate is collecting on the inside of window surfaces, shut			
			off humidifier. Excess moisture wastes fuel and damages the structur	e.		
14	3	1	65° maximum occupied, 60° maximum unoccupied during the heating seasor			
15	3	1	78° minimum when occupied and no cooling when unoccupied during the			
			cooling season.			
16	3	2	Clean and remove obstructions from a room air outlets and inlets (diffuse	11 brs		
			registers and grillers). They should be kept clean and free of all dirt	d		

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

				OPTIONAL:	OPTIONAL	
	CLASSIF	ICATION			ENERGY	
NO.	MAJOR CLASS	O. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	COST SAVINGS	DATE OF IMPLEMENTATION
			foreign materials.			
17	3	3	Inspect fans for normal operation.			
18	3	3	Inspect damper blades and linkages. Clean, oil and adjust.			
19	3	3	Clean or replace filters periodicall	y.		
20	4	1	Instruct occupants and maintenance personnel to switch off all lights w they are not needed.	nen		
21	4	3	Clean fixtures and lamps regularly.			
22	4	3	Replace lamps in groups before they burn out to maintain higher average light output per fixture.			
23	4	4	Use lower wattage lamps to provide			
24	4	4	Allow part of a lighting system to be turned off, while maintaining			
			the necessary light.			
25	5	1	Keep records of the operating schedu monthly energy consumption and purch	le ase		
			of any new equipment that affects er consumption of efficiency of the bui	ergy Iding.		
			These records will indicate the impa of energy conservation measures.	ict		
26	5		Review the record books on a regular basis.	1		
27	6	2	The burner system of fossil-fuel wat heaters should be kept clean and in	er		
20			good operating condition.			
28			sediment.			
29	/ 	3	Liean air-sides, remove soot, and scrape scale in forced warm air fur	aces.	ļ	
30	7	3	If the firing rate of gas burners is too high, it causes shor cycling and	5		
		 	excessive fuel consumption. Too low	M		
	ļ		and delivers inadequate heat to the spaces.	<u> </u>		

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A	BUILDING NAME DWAN GOLF COURSE - PUMP HOL	JSE	CITY OF BLOOMINGTON	DAJE/27/80					
	Building address 3401 West 10th Street	ang na na na na katika ng pikatan na ng tang ng	2215 West Old Shakopee Road						
ACT	сіту Bloomington	zip code 55431	CITY Bloomington	^{zip} 55431					
CONT	PERSON COMPLETING FORM Randy Smith	TELEPHONE 935-6901	CONTACT PERSON Arthur Jensen	те ерноне 881-5811					
r									
B	Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.								
		20 8040018							

	1.	AND Profit Association	PUB) (NAP)	3a.	SCHOOLS Elementary Secondary Coll. or Univ.	(SCHL-ELM) (SCHL-SECD) (SCHL-POST)	C.	LOCAL GOVERNMENT Office Storage AService	(LOCG-OFFC) (LOCG-STRG) (LOCG-SERV)
ODE	2.	ULTIMATE OWNER County XACity Transation	(CNTY) (CITY)		UVocational Education Agency Administration OTHER	(SCHL-VOCL) (SCHL-ADMN) (SCHL-ADMN) (SCHL-OTHR)		⊔Library □Police □Fire □OTHER	(LOCG-LBRY) (LOCG-PLCE) (LOCG-FIRE) (LOCG-OTHR)
BUILDING		☐ Townsnip ☐ State ☐ Public School ☐ Private School ☐ Non-Profit Association ☐ Indian Tribe	(TOWN) (STAT) (PUSC) (PRSC) (NPAP) (INDN)	b.	PUBLIC CARE Nursing Home Long Term Care Rehab. Facility Public Health Ctr. Res. Child Care Ctr.	(PBCR-NURS) (PBCR-TERM) (PBCR-RHAB) (PBCR-HCTR) (PBCR-RCCC)	d.	HOSPITALS □General □Tuberculosis □OTHER	(HOSP-GENL) (HOSP-TUBR) (HOSP-OTH R)

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:	
Have you received a mini-audit grant before? U Yes XX No	
Have you previously applied for mini-audit funding?	No
Do you wish to apply for mini-audit funding? Dives 10 No	

Date	
Nam	8

Signature. _

C

If eligible for Federal funding only: Have you received a mini-audit grant before? Have you previously applied for mini-audit funding? Yes No Do you wish to apply for mini-audit funding? Yes No The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

UEST	
REQ	Date
AUD	Name
FUND	Signature.
	\$

Check the type of energy report which was completed and submitted prior to this mini-audit report.

Elementary School Energy Report (Form No. ED-00444-02) Secondary School Energy Report (Form No. ED-00445-02) Existing Building Energy Report (Form No. EN-00041-01)

D

ENERGY REPORT CHECK-OFF

E

MINI-AUDIT STATEMENTS

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

did not Based on actual records, the energy conservation operating and maintenance procedures listed in section K_ save at least (did, did not) 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems. I recommend that this Should not be the subject of a maximudit be the subject of a maxi-audit. (should, should not)

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information E and the information E and the information in section E and the information E and	ation referred to in section F	, I recommend that this building	should not	
undergo further solar conversion analysis, and/or	should not	_ undergo further analysis of the	(should, should not) renewable resources	aste
wind, wood. (Circle proper resources)	(should, should not)			

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith	
Mini-Auditor's Name (Print or Type)	206
Signature	
Rieke Carroll Muller	Associates, Inc.
Firm Name (if none, enter none)	
P.O. Box 130	
Address	ann an ^a bhan ann ann ann an ann an ann an ann an a
612-935-6901	,
Phone	
October 27, 1980	
Date	

Witnessed by:

Building Organizational Authority (Print or Type)

Signature

Date

F	NAME	POSITION	ORGAN	IZATION	
	Randy Smith	Certified Mini-Auditor	Rieke Carroll	Muller Associates,	Inc.
	Dave Elzea	Building Maintenance	City of Blo	comington	
AUDIT TEAM					
G	BRIEF DESCRIPTION OF C	GENERAL BUILDING CONDITION (i.e. type, and f	unction)		Law Xing and a strength of the
z	MAJOR CHANGES PLANN	ISE ED WITHIN NEXT 15 YEARS (i.e. demolition, reha	bilitation, conversion from or	ne building type to another)	
DING	STRUCTURAL COMPONE Wooden Rafters	NTS OF ROOF (i.e. metal beams, wooden rafters, o	concrete)		
BUILD	ROOFING MATERIAL (i.e. Tar and Grave	tar and gravel, shingles, tile)			
H	INSTRUCTIONS: Correctly	answer the following questions for the building b	eing mini-audited.		
	Is there open land adjacent ØXes □ No	to the building?			
	3 p.m.? Roof: XXX Yes □ No. South facing Wall: ⊠XY	es ONo	g and the south facing wall uns	snaded between the nours of 9 a.m.	. and
	If the roof or wall are partly % of roof unshaded % of south facing wall un	y shaded, what percentage of the surface is unsha % ishaded%	ded?		
	What is the overall shape o XX square □ rectangle	f the building? □ H-shaped □ E-shaped □ other (specify).	and the star star star and the star sta		
	Is the roof of the building f X♀ flat □ pitched	lat or pitched?			
	If pitched, what is the com	pass orientation of the ridgeline?	The DEAR AND ADDRESS DOLLARS HARRING AND THE AND AND THE AND	nan ang ang ang ang ang ang ang ang ang	
	If pitched, what is the angl	e that the roof makes with horizontal?	0		
	Are there large obstruction	s on the roof such as chimneys, rooms for mecha	nical equipment, ventilating u	units, water towers, etc?	
	What is the exterior facing	material for the south facing wall?	Face Brick		
	What percentage of the so	uth facing wall is glass? $_0$ %			
	ls the building's space hea □ Yes □ No N(ting equipment located within or on the building?	(A no answer indicates the e	quipment is in a separate building	g.)
	If the space heating equip Ground Floor Ba	ment is inside the building, where is it located? isement			
IENTIAL ION	Is the building's water hea ☐ Yes ☐ No	ting equipment located within the building? (A no ONE	answer indicates the equipme	ent is in a separate building.)	
RMAT	If the water heating equips Ground Floor D Ba	nent is inside the building, where is it located? asement D Other (specify)	· · · ·		
SOLA	Is the water heating system Central D Multiple	n a central system, does it consist of multiple unit Combination	s, or is it a combination of the	e central and multiple units?	

Instructions. Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

	BASE PER	IOD YEAR	Fiscal Year					
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE					
Electricity								
Fuel 1								
Fuel 2								
TOTAL								
20% SAVINGS YEAR Fiscal Year								
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE					
			······································					

	ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
	Electricity			·
0	Fuel 1			
DNIAC	Fuel 2			
DATA	TOTAL			

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

Flange of Electrical Savings XX 0% XX 5% 10% 15% 20% 25% 0 other (specify) Range of Fuel Savings 0% 5% 10% 15% 20% 25% 0 other (specify)	Check two boxes in each cated			anna ann an a			Self by the state of the state	
Flange of Electrical Savings — XX 0% XX 5% 10% 15% 20% 25% other (specify) Range of Fuel Savings 0% 5% 10% 15% 20% 25% other (specify)	<u> </u>						_	_
Range of Fuel Savings 0% 5% 010% 015% 020% 025% 0 other (specify)	Plange of Electrical Savings -	XYX 0%	X-X 5%	□ 10%	0 15%	20%	25%	□ other (specily)
	Range of Fuel Savings	0%	0 5%	0 10%	0 15%	20%	25%	other (specify)

Calculate ranges of energy and cost savings -

.

and the second

2

Range of Electrical Savings

1									
	% Range		Annual Electrical Consumption		Range of Energy Savings % Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lowe	er bound%	×	<u>81680</u> kwh	=	kwh,%	×	\$_3929.42	-	\$
	to				to to				to
uppe	er bound <u>5</u> %	x	81680kwh	=	<u>4084</u> kwh, <u>5</u> %	x	<u>\$ 3929.42</u>	**	\$ 196.47
	NO FUEL		na magnafar danar - y hanar na maliforni na daʻoni doʻoni doʻoni daga ay aya magnapa		Range of Fuel Savings		an a		1999 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -
	% Range		Annual Fuel Consumption		Range of Fuel Savings % Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lowe	er bou nd %	x	Btu	=	Btu, %	x	\$	-	\$
	to				to to				to
upp	er bound	x	Btu	-	Btu, %	ж	\$	-	\$
The	mini-auditor is not resp	onsib	le if actual savings re	sultin	g from the implementation of the	energ	y conservation opport	unitie	s listed in section I do

K	in ali th vi cla se	structions, ready been e recomme hich have b assification wetion of the	Read throug undertaken ndation app een underta number sh e mini-audit	In the list of energy conservation opportunities provided. As you in your facility. The description of the past energy conservation lies, if applicable. Indicate the date of implementation of each it aken and are not on the list provided should also be included ould be taken from the classification scheme for energy conservation report should be completed by building personnel prior to the	read through th action should co em and its classi along with their vation opportuu walk-through b	e items, list to ontain the spe fication num r appropriate nities listed of y the mini-actional	below those items which have scific building location where ber. Energy conserving items o classification numbers. The on pages 25 through 37. This uditor.
l		CLASSIF	ICATION			ENEDON	1
ITI N	EM O.	N MAJOR CLASS	O. SUB	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATIO
		OLA33	CLASS				
	town from the second			ਜ਼ਗ਼ਜ਼੶੶੶੶੶੶ਜ਼ਜ਼੶੶੶ਜ਼ਖ਼ਫ਼ੑਗ਼ਗ਼੶੶ਖ਼੶੶ਫ਼ਜ਼੶੶੶ਜ਼੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶੶			
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Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through. OPTIONAL:

L				OT TIONAL.	OF HORAL	
	CLASSIF	FICATION			ENERGY	
ITEM NO.	MAJOR CLASS	O. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loos connections and bad			
3	1	2	Lubricate motors to reduce wear and excessive torque			
4	1	2	Replace worn bearings.			
5	1	2	Keep motors clean to make cooling			
6	1	2	Balance three-phase power sources to			
7	1	2	Check for over-voltage conditions on motors.			
8	1	2	Check alignment of motors to driven equipment, align and tighten as nece	sarv.		
9	1	2	Replace worn or defective motors wit			
			load as possible and use the highest			
10	1	2	Where it is impractical to replace			· · · · ·
			factors, use capacitors at motor ter	ninals		
11	1	4	Shade outdoor transformer banks from			
12	3	3	Check for packing wear which can cau excessive leakage Repack to avoid	se		
			excessive water wastage and shaft er	osion.		
13	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or			
			replace as necessary.			
14	4	1	Instruct occupants and maintenance personnel to switch off all lights w	hen		
			they are not needed.			
15	5	1	Keep records of the operating schedu monthly energy consumtion and purcha	le, se		
			of any new equipment that affects en consumption of efficiency of the bui	ergy Id-		
			ing. These records will indicate the	es		
16	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

MINI-AUDIT REPORT

FORM NO. MIN-01

A	BUILDING NAME Brookside Park Shelter		NAME OF ORGANIZATION City of Bloomington	Oct. 2, 1980		
	Building Address 10010 Xerxes Avenue South		ADORESS 2215 West Old Shakopee Road			
ACT	city Bloomington	zip code 55431	city Bloomington	zip code 55431		
CONT	PERSON COMPLETING FORM Randy Smith	telephone 935-6901	contact person Arthur Jensen	telephone 881-5811		
B	Instructions: For blocks 1 and 2 check the box v describes the building type and then within the	which best fits the building e category check off the s	g ownership conditions. For block 3 determine whi sub category befitting the building function.	ch of the four categories		
	1. OWNERSHIP TYPE XXPublic (PUB) ONN-Profit Association (NAP)	3a. SCHOOLS Elementary Secondary Coll. or Univ.	C. LOCAL GOVEI (SCHL-ELM) Doffice (SCHL-SECD) Storage (SCHL-POST) Discrete (SCHL-VOCL) Discrete	INMENT (LOCG-OFFC) (LOCG-STRG) (LOCG-SERV)		
CODE	2. ULTIMATE OWNER County (CNTY) City (CITY) Township (TOWN)		jency (SCHL-ADMN) DPolice n (SCHL-ADMN) DFire (SCHL-OTHR) DTHER	(LOCG-PLCE) (LOCG-FIRE) (LOCG-OTHR)		
	□ State (STAT) □ Public School (PUSC) □ Private School (PRSC) □ Non-Profit Association (NPAP) □ Indian Tribe (INDN)	Diversing Hom □Long Term C □Rehab. Facili □Public Health □Res. Child Ca	d. HOSPITALS Care (PBCR-NURS) □General Care (PBCR-TERM) □Tuberculosi: ty (PBCR-RHAB) □OTHER in Ctr. (PBCR-HCTR) are Ctr. (PBCR-RCCC)	(HOSP-GENL) ; (HOSP-TUBR) (HOSP-OTHR)		
C	Instructions: With reference to page 23 entitled just Federal funding, then answer the questions	I Funding Information, de correctly for the situatio	stermine if the facilities are eligible for both Fede n. This section must be signed and dated by the h	ral and State funding or lead of the organization		
	Have you received a mini-audit grant before? Have you previously applied for mini-audit fu Do you wish to apply for mini-audit funding? Date	? U Yes, XX No unding? XA Yes No ? U Yes XX No ? O Yes No unding? U Yes No ? U Yes No ? U Yes No ? O Yes No ? O Yes No Ino	ets if necessary.)			
MINI-AUDIT FUNDING REQUEST	Date Name: Signature:		-			

Check the type of energy report which was completed and submitted prior to this mini-audit report.

□ Elementary School Energy Report (Form No. ED-00444-02) □ Secondary School Energy Report (Form No. ED-00445-02) ☆ Existing Building Energy Report (Form No. EN-00041-01)

ENERGY REPORT

E

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not save at least 20% of the building's energy consumption as specified in section 1.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems. Liecommend that this Should not be the subject of a maxi-audit. (should should not)

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building $\frac{\text{Should not}}{1000}$

(should not) undergo further solar conversion analysis, and/or_____Should_not_____undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources) (should not)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Witnessed by:

Randy Smith	
Mini-Auditor's Name (Print or Type)	n a stand a channa a stand a st
Kindell Duit	206
Signature	
Rieke Carroll Muller Asso	<u>ciates, In</u> c.
P.O. Box 130	
Address	
612-935-6901	•
Phone	
<u>Sept. 30, 1980</u>	

Building Organizational Authority (Print or Type)

Signature

Date

MINI-AUDIT

F	NAME	POSITION	ORGANIZATION				
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Associates				
	Rienert Ege	Maintenance Foreman	City of Bloomington				
		1					
t s							
		an a					
G	BRIEF DESCRIPTION OF GEI	VERAL BUILDING CONDITION (i.e. type, and function)				
	MAJOR CHANGES PLANNED	SE WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitatio	n, conversion from one building type to another)				
ION	NONE STRUCTURAL COMPONENTS	S OF ROOF (i.e. metal beams, wooden rafters, concrete	a)				
ORMAC	Wooden Rafters ROOFING MATERIAL (i.e. tar	and gravel, shingles, tile)					
BF	Tar and Gravel						
H	INSTRUCTIONS: Correctly an	swer the following questions for the building being mir	ni-audited.				
	ls there open land adjacent to X∆ Yes □ No	the building?					
	Solar collectors need to be loca 3 p.m.? Roof: XXYes □ No South facing Wall: XXYes	Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.? Roof: XXYes INO South facing Wall: XXY so INO					
	If the roof or wall are partly st % of roof unshaded % of south facing wall unsh	aded, what percentage of the surface is unshaded? % aded%	· · ·				
	What is the overall shape of th XX square □ rectangle □	ie building?] H-shaped E-shaped					
	ls the roof of the building flat XX flat □ pitched	or pitched?	· · · ·				
;	If pitched, what is the compas	s orientation of the ridgeline?					
	If pitched, what is the angle th	at the roof makes with horizontal?					
	Are there large obstructions o	n the roof such as chimneys, rooms for mechanical eq	uipment, ventilating units, water towers, etc?				
	What is the exterior facing ma	Iterial for the south facing wall?					
	What percentage of the south	facing wall is glass? <u>10</u> %					
	ls the building's space heating XXI Yes □ No	g equipment located within or on the building? (A no a	nswer indicates the equipment is in a separate building.)				
	If the space heating equipmen	nt is inside the building, where is it located? ment					
IN	ls the building's water heating X ₩ Yes □ No	; equipment located within the building? (A no answer	indicates the equipment is in a separate building)				
MATIO	If the water heating equipmen	nt is inside the building, where is it located? ment					
SOLA	is the water heating system a XX Centrai □ Multiple	central system, does it consist of multiple units, or is i Combination	t a combination of the central and multiple units?				

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

1

-			BASE PE				Fiscal Year
	ENERGY TYPE	ENERGY	JSAGE	cc	NVERSION F	ACTOR	BTU USAGE
	Electricity		nakan atalah di Tanggang Kalanda ang Sangga		an a		
	· Fuel 1						
	Fuel 2			,			
	TOTAL						
			20% SAV	INGS YEAR	a - Calent III III III III III III III III III I	<u></u>	Fiscal Year
	ENERGY TYPE	ENERGY	JSAGE	co	ONVERSION F	ACTOR	BTU USAGE
	Electricity					generalitet (fillen dessenden se filmateurs	
s	Fuel 1						
AVING	Fuel 2		999 <u>9979999999999999999999999999999999</u>			an <u>na sea an an</u>	
20% S DATA	TOTAL					<u></u>	
				A			
J	Instructions: This section is to be o state the roughly estimated range o of the new mini-audit opportunit percentages by the annual electri	completed by the mini of the percent of total ies listed in section I cal and fuel consum	-auditor after th electrical and fu Secondly, ca ption data on th	ne walk-thru j iel consumpt liculate the ne energy re	certion of the n ion which wou ange of energ port.	nini-audit. Firs Id be saved res gy and cost sa	t, check the appropriate boxes which sulting from the implementation of all avings by multiplying the estimated
1	Check two boxes in each categor	y —	98.98.99 ⁹ 99999999999999999999999999999		u <u>n a an </u>		
	Range of Electrical Savings — X	X10% XDX.5%	□ 10%	0 15%	20%	25%	D other (specify)
	Range of Fuel Savings C	⊐o‰ X∯ 5%	XX 10%	0 15%	□ 20%	25%	other (specify)
2	Calculate ranges of energy and c	ost savings —					
	Range of Electrical Savings						

	% Range	Annual Electrical Consumption	Range of Energy Savings % Range	Annual Electrical Dollars Spent	Range of Electrical Dollars Savings
	lower bound% x	<u>7319</u> kwh =	0 kwh,%	× \$_333.33_	s
	to		to to		to
	upper bound <u>5</u> % x	$_{7319}$ kwh =	<u>365.9</u> kwh, <u>5</u> %	x <u>\$ 333.33</u>	<u>\$ 16.67</u>
3			Range of Fuel Savings	na ana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny	
	% Range	Annual Fuel Consumption	Range of Fuel Savings & % Range	Annual Fuel Dollars Spent	Range of Fuel Dollars Savings
	lower bound 5 %	, 2 <u>0.8x10</u> ′ _{Btu} =	10.4×10^{5}	* <u>\$_561.2</u> 2 _	<u>\$ 28.06</u>
NGS AATION	upper bound <u>10</u> %	, 2 <u>0.8x10⁷ вти =</u>	20.8×10^{6} 10^{4}	× <u>\$_561.2</u> 2	\$
SAVIN	The mini-auditor is not response not fall between the roughly e	sible if actual savings result estimated ranges which are	ing from the implementation of the e	nergy conservation opportuniti	es listed in section I do

1 1

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. This section of the mini-sudit report should be completed by building personnel prior to the welk-through by the mini-auditor.

		OPTIONAL: OPTIONAL:						
ITEM NO.	CLASSIF N MAJOR CLASS	SUB	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATIO		
1	5	2	Routine Maintenance Schedule					
	1							
	+			<u>en findinis de Astro Constantes entre anticipations</u>				
	+							
	1							
	+	<u> </u>						
	+	<u>}</u>						
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			· .					
	-	+	· · ·		-			

Note Reproduce this page as necessary

K

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

CLASSIFICATION					ENERGY	
NO.	NO. NEW MINI-AUDIT OPPORTUNITIES CLASS CLASS		SAVINGS	SAVINGS	DATE OF IMPLEMENTATION	
1	1	1	Keep all controls free of dust.			
2	2]	Add insulation between rafters			
3	2	8	Caulk all cracks that allow air and moisture into the building.			
4	2	10	Replace single glazed windows with double glazed thermopanes.			
5	2	11	Replace high windows with insulation wall papels.	n		
6	3	1	Check the calibration of all contro and devices for proper settings and operations	llers		
7	2	1	65 ⁰ Employment counted 60 ⁰ Employment			
,			unoccupied. Consider turning off heat			· · · · · · · · · · · · · · · · · · ·
	<u> </u>		arter ice skating season.	L		
8	3	2	[Clean and remove obstructions from al room air outlets and inlets (diffuser	∏ ≸,		
	ļ		be kept clean and free of all dirt			· · · · · · · · · · · · · · · · · · ·
			and foreign materials.			î
9	3	3	Inspect fans for normal operation.			
10	3	3	Inspect ductwork for air leakage. Seal all leaks by taping or caulking.		1	(
11	3	1	Clean or replace filters periodically	/.	1	
12	4]	Instruct occupants and maintenance personnel to switch off all lights wh	hen		и
			they are not needed.			
13	4	3	Clean fixtures and lamps regularly.			
14	4	3	Replace lamps in groups before they burn out to maintain higher average			
			light output per fixture.			
15	4	4	Use lower wattage lamps to provide the necessary illumination.	ne		-
16	4	4	Allow part of a lighting system to be turned off, while maintaining the	9		
			necessary light.			
י 17 	5	1	Keep records of the operating schedu monthly energy consumption and purch	le ase		× .
			of any new equipment that affects en consumption of efficiency of the bui	ergy 1d-		

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW DPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number form the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

	·			UPTIONAL:	OPTIONAL	د. در این زندگی از مان است این
1	CLASSIF	ICATION			ENERGY	
ITEM	N	D .	NEW MINI-AUDIT OPPORTUNITIES	ENERGY	COST	DATE OF IMPLEMENTATION
NO.	MAJOR	SUB		SAVINGS	SAVINGS	
	CLASS	CLASS				
			ing These records will indicate the			
1	1		ing, induction as with indicate the			
	<u> </u>		impact of energy conservation measur	<u>es.</u>	angenta channel lan metrocal	v.
18	5	1	Review the record books on a regular	1		
	-		hacic			
10	1		Dasis.			
19	6		Adjust water supply to 100°F			
	1					
20	6	2	The human system of feedil fuel ust			a an
20	0	2	The burner system of tossil-tuel wat	er		
L	L		<u>heaters should be kept clean and in</u>	bood		,
			operating condition	ľ		
			oper worlig condicion:			
21	6	2	Periodically drain and remove the			
			sediment	· ·		· · · · · · · · · · · · · · · · · · ·
22	C	2		and any angle of the second	and a large of the second second second	and the second
22		2	Snut down neating equipment when the			
			hot water is not required	<u>.</u>		4
23	7	2	Clean air-sides remove sont and			
25	1 '	5	ciean air-siues, remove sout, and			
			scrape scale in forced warm air furn	aces.		
24	7	3	If the firing rate of gas or oil bur	hers		
	1		is too high it causes short cycling	and		
	1		re coo migna it causes share cycinny		1	<u></u>
			excessive fuel consumption. loo low			
			a rate requires constant operating a	hd	t	4
			delivers inadequate heat to the	l		
•	1		derivers madequate near to the			î
			spaces.			
1 25	7	4	Turn off gas pilots for furnaces, bo	lers.		·
			and space bostons during the ner	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		3
			and space neaters during the non-			
			heating months and during long unocc	upied		
			periods.			м
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Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW PPORTUNITIES

MINI-AUDIT REPORT

FORM NO. MIN-01

-						
A	Bryant Park Shelter		NAME OF ORGANIZATION City of Bloomington	9/30/80		
	BUILDING ADDRESS		ADDRESS			
	8513 Colfax Avenue South	r	2215 West Old Shakopee Ro	ad		
5	Diseminaten MN	ZIP CODE	CITY Discontington MN	ZIP CODE		
ATA	BLOOMINGTON, MN		CONTACT PERSON	TELEPHONE		
DAID	Randy Smith	935-6901	Arthur Jensen	881-5811		
Anna Anna A						
B	Instructions: For blocks 1 and 2 check the box describes the building type and then within the	which best fits the building e category check off the s	g ownership conditions. For block 3 determine whic sub category befitting the building function.	h of the four categories		
	MAPublic (PUB)	Elementary Secondary Coll. or Univ.	(SCHL-ELM) DOffice (SCHL-SECD) Storage (SCHL-POST) Corrage (SCHL-VOCL) Library	(LOCG-OFFC) (LOCG-STRG) (LOCG-SERV) (LOCG-LBRY) (LOCG-DLCC)		
Y CODE	2. ULTIMATE OWNEH County (CNTY) XVCity (CITY) Township (TOWN) State (STAT)	DEducation Ag DAdministratio DOTHER b. PUBLIC CARE	jency (SCHL-ADMN) DFolice on (SCHL-ADMN) DFire (SCHL-OTHR) DOTHER d HOSPITALS	(LOCG-PLCE) (LOCG-FIRE) (LOCG-OTHR)		
	Public School (PUSC) Private School (PRSC) Non-Profit Association (NPAP) Indian Tribe (INDN)	☐ Nursing Hom ☐ Long Term C ☐ Rehab. Facili ☐ Public Health ☐ Res. Child C	are (PBCR-NURS) General are (PBCR-TERM) Duberculosis ity (PBCR-RHAB) DOTHER are Ctr. (PBCR-RCCC)	(HOSP-GENL) (HOSP-TUBR) (HOSP-OTHR)		
(
)	Instructions: With reference to page 23 entitlec just Federal funding, then answer the questions Have you received a mini-audit grant before' Have you previously applied for mini-audit funding? Do you wish to apply for mini-audit funding? Date	y Carrectly for the situation y Carrectly for the situation	ets if necessary.)	and State funding or ad of the organization		
MINI-AUDIT FUNDING REQUEST	Date Name Signature					

Check the type of energy report which was completed and submitted prior to this mini-audit report.

□ Elementary School Energy Report (Form No. ED-00444-02) □ Secondary School Energy Report (Form No. ED-00445-02) XX Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities. listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K	did not	ave at least
20% of the building's energy consumption as specified in section I.	(did, did not)	

Based upon my observation of the physical characteristics of this building and the building's major energy using systems. I recommend that this should not be the subject of a maxi-audit.

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the inform	ation referred to in section	E I recommend that this building	should not	
based upon the mormation in section 2 and the morm		r, recommend mattins building	(should, should not)	
undergo further solar conversion analysis, and/or	snoula not		renewable resources	waste
wind, wood. (Circle proper resources)	(should, should not)			

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith	
Mini-Auditor's Name (Print or Type)	
Kandy Smith 206	•
Signature /	
Rieke Carroll Muller Assoc., Inc.	
Firm Name (if none, enter none)	
PO Box 130 Hopkins, MN 55343	
Address	
(612) 935-6901	
Phone	-
September 30, 1980	

Building Organizational Authority (Print or Type)

Signature

Witnessed by:

Date

MINI-AUDIT STATEMENTS Date

ENERGY REPORT

E

F	NAME	POSITION	ORGANIZATION
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc
	Dave Elzea	Building Maintenance	City of Bloomington
			· · · · · · · · · · · · · · · · · · ·
AUDIT			
G	Good, Warming Ho	ERAL BUILDING CONDITION (i.e. type, and function DUSE, Meeting Hall	·)
z	MAJOR CHANGES PLANNED V None	WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitatio	on, conversion from one building type to another)
4G IATIO	STRUCTURAL COMPONENTS	OF ROOF (i.e. metal beams, wooden rafters, concret	e)
ILDI OBO	ROOFING MATERIAL (i.e. tar a	nd gravel, shingles, tile)	
BZ	Tar and Gravel		
H	INSTRUCTIONS: Correctly answ	wer the following questions for the building being mi	ni-audited.
	Is there open land adjacent to the Kill Kills is the second se	he building?	
	Solar collectors need to be locate 3 p.m.? Roof: XXYes □ No South facing Wall: XXYes	id in an unshaded area. Is the roof of the building and th 	ne south facing wall unshaded between the hours of 9 a.m. and
	If the roof or wall are partly sha % of roof unshaded % of south facing wall unshad	ded, what percentage of the surface is unshaded? % led%	
	What is the overall shape of the □ square X₩ rectangle □	building? H-shaped	
	Is the roof of the building flat or XXflat pitched	r pitched?	
	If pitched, what is the compass	orientation of the ridgeline?	•
	If pitched, what is the angle tha	t the roof makes with herizontal?	
	Are there large obstructions on Yes XNo	the roof such as chimneys, rooms for mechanical ec	uipment, ventilating units, water towers, etc?
	What is the exterior facing mate	erial for the south facing wall? Face_Brick	<
1	What percentage of the south fa	acing wall is glass? <u>5</u> %	
	Is the building's space heating XXyes D No	equipment located within or on the building? (A no a	Inswer indicates the equipment is in a separate building.)
	If the space heating equipment	is inside the building, where is it located?	
MTIAL	Is the building's water heating e	equipment located within the building? (A no answer	indicates the equipment is in a separate building.)
NATIO!	If the water heating equipment Ground Floor XX Baseme	is inside the building, where is it located? ent Dother (specify)	
NFOR	Is the water heating system a c	entral system, does it consist of multiple units, or is Combination	it a combination of the central and multiple units?

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

	BASE PE	RIOD YEAR	Fiscal Year		
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE		
Electricity					
Fuel 1	1				
Fuel 2					
TOTAL					
20% SAVINGS YEAR Fiscal Year					

	ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
	Electricity			
S	Fuel 1			
AVING	Fuel 2			
20% S DATA	TOTAL			

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

Check two boxes in each category —							
Range of Electrical Savings -	- XX 0%	XX 5%	□ 10%	□ 15%	□ 20%	□ 25%	other (specify)
Range of Fuel Savings —	0%	XX 5%	XX 10%	15%	□ 20%	25%	O other (specify)

Calculate ranges of energy and cost savings -

1

2

Range of Electrical Savings Annual Electrical Annual Electrical Range of Electrical Range of Energy Dollars Savings % Range Consumption Savings % Range **Dollars** Spent 0 0 8083 0 380.87 n lower bound kwh kwh. to to to to 19.05 380.87 5 404.2_ kwh. 8083 5 kwh upper bound 3 Range of Fuel Savings Annual Fuel Range of Fuel Annual Fuel Range of Fuel Savings 12.4x10⁶ Btu, % Range Consumption % Range **Dollars Spent Dollars Savings** 24.9x10' 5 s 661.92 5 \$ 33.10 Btu lower bound to to to to = 12<u>.9</u>.10⁶ SAVINGS ESTIMATION 24.9x10 10 10 **661.92** <u>\$ 66.19</u> upper bound The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

63

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.

			OPTIONAL: OPTIONAL:						
ITEM NO.	CLASSIF MAJOR CLASS	ICATION IO. SUB	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION			
1	5	2	Routine maintenance schedule						
	1								
	1								
	1								
an ang panta an ang pang pang pang pang pang pang p									
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	<u>}</u>								
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Note Reproduce this page as necessary

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NEW DPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through. OPTIONAL:

17514	CLASSIFICATION			ENERGY	ENERGY	
NO.	MAJOR	SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	SAVINGS	SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	2	1	Check the amount of insulation in			
			the ceiling.			
3	2	1	Add insulation in attic spaces if			
			needed.	an sa mangangangan pangan sa man		
4	2	2	Weatherstrip all exterior doors.			··· · ·
5	2	8	Insulate walls with rigid insulation			
			on inside and/or outside surfaces, or place loose fill insulation			
,			in wall cavaties if needed.	1.	17 mar 41	· · · · · · · · · · · · · · · · · · ·
6	2	10	Inspect_window closing and locking			
 			devices to insure a tight window.			
7	2	10	Replace single glazed windows with			
	ļ		double glazed thermopanes.			
- 8	. 3	1	Check the calibration of all			
	ļ		settings and operations.			
			Louge the evenly air temperature			
-9	3	1	for heating to the lowest point			
· · · · ·			required heating.			
			650 maximum accurated 600 maximum		ļ	
10	3	1	unoccupied during the heating seasor	Ŋ		
4			Lonsider turning off heat when not used.			
11	3	2	Clean and remove obstructions from			
			all room air outlets and inlets (diffusers, registers and grillers).			
			They should be kept clean and free of all dirt and foreign materials.			
12	3	3	Inspect and lubricate bearings on fa	ans.		

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW DPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

					OPTIONAL: OPTIONAL:			
	CLASSIF	CATION			ENERGY			
ITEM	MAJOP		NEW MINI-AUDIT OPPORTUNITIES	ENERGY	COST	DATE OF IMPLEMENTATION		
	CLASS	CLASS	·	5411105	SAVINGS			
13	3	3	Inspect drive belts on fans. Adjust					
			or replace as necessary to ensure					
			proper operation.					
14	3	3	Inspect tans for normal operation.			and and a second s		
	ļ							
15	2	2	Clean an wanlage filtene periodicall					
15	3	3	clean or replace filters periodicall	<u>y.</u>				
	<u> </u>							
16		1	Instruct occurants and maintenance					
10	4	<u> </u>	nonconnol to switch off all lights		<u> </u>	······································		
			when they are not needed					
<u> </u>			when they are not needed.		<u> </u>			
						ann an ann an ann an ann ann an tarthachair an an an 1800 an 18		
17	4	2	Clean fixtures and lamps regularly.					
·	<u>├</u> ── [─] ──		crean rixeares and ramps regularly.		<u> </u>			
			· · · · · · · · · · · · · · · · · · ·	<u>}</u>	<u> </u>			
18	4	4	Replace lamps in groups before they					
	<u> </u>	<u> </u>	burn out to maintain higher average		1			
			light output per fixture.					
	1	1			1			
				1	1			
19	4	4	Use lower wattage lamps to provide					
			necessary illumination.					
20	4	4	Allow part of a lighting system	<u> </u>				
			to be turned off, while maintaining	1				
 			the necessary light.	<u> </u>	+			
		+						
21	5	1	Keen records of the operating					
<u> </u>	+	+	schedule monthly energy consumption	n	+			
			and purchase of any new equipment	1				
	+	+	that affects energy consumption	+				
			of efficiency of the building					
 	+	+	These records will indicate the		+			
			impact of energy conservation					
1	+	1	measures.	1	+	an a		
		1			1			
1	1	1		1	1			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.
NEW PPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

					ENERGY	
NO.	MAJOR CLASS	SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY	COST SAVINGS	DATE OF IMPLEMENTATION
22	5	1	Review the record books on a regular			
			basis.			
23	5	2	Establish a specific maintenance			
			schedule for each building to ensure that all components of the			
			specific building operate at maximum efficiency.			
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Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

	JUILDING NAME		NAME OF ORGANIZATION	DATE
	BRYE PARK SHELTER		City of Bloomington	10/27/80
8	BUILDING ADDRESS 10518 Xavier Avenue South		ADDRESS 2215 West Old Shakopee Roa	ıd
ACT	Bloomington	zip code 55431	сіту "Bloomington	zip code 55431
CONT DATA	PERSON COMPLETING FORM Randy Smith	теlерноне 935-6901	Contact person Arthur Jensen	telephone 881-5811

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

	1.	OWNERSHIP TYPE XPublic (PUB) ONon-Profit Association (NAP)			3a. SCHOOLS Elementary (SCHL-ELM) Secondary (SCHL-SECD) Coll. or Univ. (SCHL-POST) Secondary (SCHL-POST)			LOCAL GOVERNMENT Office Storage X Service	MENT (LOCG-OFFC) (LOCG-STRG) (LOCG-SERV)	
ODE	2.	ULTIMATE OWNER County	(CNTY) (CITY)		UVocational Education Agency Administration OTHER	(SCHL-VOCL) (SCHL-ADMN) (SCHL-ADMN) (SCHL-OTHR)		DLibrary Police Fire OTHER	(LOCG-LBRY) (LOCG-PLCE) (LOCG-FIRE) (LOCG-OTHR)	
BUILDING ELIGIBILITY C		□ fouriship □ State □ Public School □ Private School □ Non-Profit Association □ Indian Tribe	(TOWN) (STAT) (PUSC) (PRSC) (NPAP) (INDN)	b.	PUBLIC CARE Nursing Home Long Term Care Rehab. Facility Public Health Ctr. Res. Child Care Ctr.	(PBCR-NURS) (PBCR-TERM) (PBCR-RHAB) (PBCR-HCTR) (PBCR-RCCC)	d .	HOSPITALS General Tuberculosis OTHER	(HOSP-GENL) (HOSP-TUBR) (HOSP-OTHR)	

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding: Have you received a mini-audit grant before? Have you previously applied for mini-audit funding? Do you wish to apply for mini-audit funding? Yes XX No

Name .

Signature.

Date _

If eligible for Federal funding only:

Have you received a mini-audit grant before? Have you received a mini-audit grant before? Have you previously applied for mini-audit funding? Do you wish to apply for mini-audit funding? The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

ST	
EQUE	Date
NG R	Name
MINI-A	Signature,

Check the type of energy report which was completed and submitted prior to this mini-audit report.

Elementary School Energy Report (Form No. ED-00444-02)

ENERGY REPORT CHECK-OFF

E

MINI-AUDIT

Existing Building Energy Report (Form No. EN-00041-01) Secondary School Energy Report (Form No. ED-00445-02)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

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Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

save at least (did, did not) 20% of the building's energy consumption as specified in section I.

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria

Based upon the information in section E and the information	ation referred to in section F	. I recommend that this building	SHOUTA HOL	
	-1 - 7 1 -		(should, should not)	
undergo further solar conversion analysis, and/or	should not	- undergo further analysis of the	renewable resources	waste
wind, wood. (Circle proper resources)	(should, should not)			

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith	
Mini-Augitor's Name (Print or Type)	206
<u>Rieke Carroll Muller Associates</u> Firm Name (if none, enter none)	, Inc.
P.O. Box 130	
Address 612-935-6901	
October 27, 1980	

Witnessed by:

Building Organizational Authority (Print or Type)

chould not

Signature

Date

F	NAME	POSITION	ORGANIZATION
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Associates
	Dave Elzea	Building Maintenance	City of Bloomington
53			
AU AU			
G	BRIEF DESCRIPTION OF G Good, Warming H	ENERAL BUILDING CONDITION (i.e. type, and function of the state of the	on)
7	MAJOR CHANGES PLANN	ED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilita	tion, conversion from one building type to another)
MATION	STRUCTURAL COMPONEN Wooden Rafters	ITS OF ROOF (i.e. metal beams, wooden rafters, concr	ote)
NFOR	ROOFING MATERIAL (i.e. t	ar and gravel, shingles, tile)	
H	INSTRUCTIONS: Correctly	answer the following questions for the building being r	nini-audited.
	Is there open land adjacent	to the building?	
	Solar collectors need to be lo 3 p.m.? Roof: XXX Yes Dig South facing Wall: XXX Ye	ocated in an unshaded area. Is the roof of the building and	the south facing wall unshaded between the hours of 9 a.m. and
	If the roof or wall are partly % of roof unshaded % of south facing wall un	shaded, what percentage of the surface is unshaded? % shaded%	
	What is the overall shape of XX square rectangle	the building? □ H-shaped □ E-shaped □ other (specify)	
	ls the roof of the building fl	at or pitched?	
	If pitched, what is the comp	bass orientation of the ridgeline?	······································
	If pitched, what is the angle	that the roof makes with horizontal?	
	Are there large obstruction:	s on the roof such as chimneys, rooms for mechanical	equipment, ventilating units, water towers, etc?
	What is the exterior facing	material for the south facing wall?Fa	ce Brick
	What percentage of the sou	ith facing wall is glass?10%	
	Is the building's space heat XX Yes □ No	ing equipment located within or on the building? (A no	answer indicates the equipment is in a separate building)
	If the space heating equipn	nent is inside the building, where is it located? sement	
ENTIAL	Is the building's water heat XX Yes □ No	ing equipment located within the building? (A no answ	er indicates the equipment is in a separate building.)
R POTI	If the water heating equipm AD Ground Floor D Ba	nent is inside the building, where is it located? sement	
SOLA	Is the water heating system XII Central D Multiple	n a central system, does it consist of multiple units, or i □ Combination	s it a combination of the central and multiple units?

62 [.]

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

	BASE PE		Fiscal Year
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity		T	
Fuel 1			
Fuel 2		r.	
TOTAL			
	20% SAVI	NGS YEAR	Fiscal Year
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			
Instructions: This section is to be	completed by the mini-auditor after the	e walk-thru pertion of the mini-audit. Fi	rst, check the appropriate boxes w

state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1	Check two boxes in each category -	-		······		-	
	Range of Electrical Savings — X $\!$	‰ Χ⊠,5%,	0 10%	15%	20%	25%	other (specify)
	Range of Fuel Savings 0	[∞] X ⁻ ⁵ [∞]	XX 10%	0 15%	20%	25%	other (specify)

2 Calculate ranges of energy and cost savings -

Range of Electrical Savings

	% Range	Annual Electrical Consumption	Range of Energy Savings	% Range	Annual Electrical Dollars Spent	Range of Electrical Dollars Savings
	lower bound%	x _7142_ kwh	= <u> 0 </u>	<u> </u>	<u>\$_333.95</u>	s
	to upper bound <u>5</u> %	x _7142kwh	to = <u>357.1</u> kwh, .	to 5 % ×	<u>\$ 333.95</u>	\$ <u>16.70</u>
3			Range of Fuel Sa	vings		
	% Range	Annual Fuel Consumption	Range of Fuel Savings ₇	% Range	Annual Fuel Dollars Spent	Range of Fuel Dollars Savings
	lower bound <u>5</u> %	х 12 <u>.3х10′</u> вtu	= 61 <u>.3x10′</u> Btu,	<u> 5 </u> % ×	<u>\$_348.8</u> 4 <u>-</u>	<u>\$ 17.44</u>
NGS MATION	to upper bound <u>10</u> %	, 12 <u>.3х10⁷ вто</u>	= 12 <u>.3x10</u> 6 Btu	10 % ×	<u>\$_348.8</u> 4 _	\$
SAVI	The mini-auditor is not respo not fall between the roughly	insible if actual savings rea estimated ranges which i	sulting from the implemen are specified.	tation of the energy	y conservation opportuni	ties listed in section I do

. .

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. This section of the mini-audit report should be completed by building personnel prior to the welk-through by the mini-auditor.								
	CLASSIE	CATION		OPTIONAL:	OPTIONAL:	r		
ITEM NO.	MAJOR	O. SUB	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATIO		
	CLASS	CLASS	: 					
			an a					
			en en fan de					
		<u>†</u> − − †			-			
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		$\left\{ \begin{array}{c} \\ \end{array} \right\}$			+			
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NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

	-		OPTIONAL: OPTIONAL:			
ITEM NO.	CLASSIF NO MAJOR CLASS	ICATION D. SUB	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
]	1	1	Keep all controls free of dust.			
2	2	1	Add insulation between rafters.			
3	2	2	Weatherstrip all exterior doors.			
4	2	8	Caulk all cracks that allow air and moisture into the building.			
5	2	10	Inspect window closing and locking devices to insure a tight window.			
6	2	10	Replace single glazed windows with double glazed thermopanes.			
7	3	1	Check the calibration of all control and devices for proper settings and operations.	lers		
8	3	1	65 [°] F maximum occupied, 60 [°] F maximum unoccupied.			
9	3	1	Consider turning off heat when build is unoccupied for a long period of time.	ing		
10	3	3	Make sure that all fans, frequently inoperative in unit heaters, fan coi			
Barton antina ()	<u> </u>		normally to increase the heat transf rate from heating coils.	ng er		
11	4	1	Instruct occupants and maintenance personnel to switch off all lights when they are not needed.			
12	4	3	Clean fixtures and lamps regularly.			
13	4	3	Replace lamps in groups before they burn out to maintain higher average			
	ļ	ļ	light output per fixture.	ļ		
14	4	1	Use lower wattage lamps to provide the necessary illumination.			
15	4	1	Allow part of a lighting system to be turned off, while maintianing the necessary light.			
16	5	1	Keep records of the operating schedu	le		
			af any new equipment that affects en	ase ergy Id-		
			ing. These records will indicate the	As.		

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			OPTIONAL: OPTIONAL:			
ITEM NO.	CLASSIF N MAJOR	ICATION O. SUB	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
17	CLASS 5	CLASS]	Review the record books on a regular			ana da any mana any any amin'ny
18	6	1	Adjust water supply to 100 ⁰ F.			
19	6	2	All electric heating equipment shoul be checked for corroded elements and	d		
			loose connections and repaired as required.			
20	6	2	Shut down heating equipment when the hot water is not required.			· · · · · · · · · · · · · · · · · · ·
21	7	4	Turn off gas pilots for furnaces, bo and space heaters during the non-hea	ilers ting		
			months and during long unoccupied periods.			
22	7	4	Keep all heat exchanger surfaces cle Check air-to-fuel ratio and adjust	an.		
			as necessary on unit heaters.			
23	7	4	Follow guidelines suggested for fan and motor maintenance.			
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						4
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1	<u> </u>					

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Note 2: Reproduce this page as necessary.

NEW DPPORTUNITIES

MINI-AUDIT REPORT

FORM NO. MIN-01

A	BUILDING NAME BUSH LAKE BEACH HOUSE		NAME OF ORGANIZATION CITY OF BLOOMINGT	ON DATE 10/27/80		
	BUILDING ADDRESS 9230 East Bush Lake Road		ADDRESS 2215 West Old Shakopee Road			
ACT	сіту Bloomington	zip code 55431	сіту Bloomington	^{zip} code 55431		
CONT	PERSON COMPLETING FORM Randy Smith	TELEPHONE 935-6901	contact person Arthur Jensen	telephone 881–5811		
В	Instructions: For blocks 1 and 2 check the box describes the building type and then within th	which best fits the building e category check off the s	g ownership conditions. For block sub category befitting the building	3 determine which of the four categories y function.		
	1. OWNERSHIP TYPE ØPublic (PUB) □Non-Profit Association (NAP)	3a. SCHOOLS □Elementary □Secondary □Coll. or Univ. □Vocational	C. (SCHL-ELM) (SCHL-SECD) (SCHL-POST) (SCHL-VOCL)	LOCAL GOVERNMENT Office (LOCG-OFFC) Distorage (LOCG-STRI) WService (LOCG-SER) DLibrary (LOCG-LBR)	IMENT (LOCG-OFFC) (LOCG-STRG) (LOCG-SERV)	
CODE	2. ULTIMATE OWNER County (CNTY) City (CITY) Township (TOWN)	Education Ag Administratio	jency (SCHL-ADMN) in (SCHL-ADMN) (SCHL-OTHR)	Police (LOCG-PLCE DFire (LOCG-FIRE DOTHER (LOCG-OTH)	E)) R)	
BUILDING ELIGIBILITY	UState (STAT) □Public School (PUSC) □Private School (PRSC) □Non-Profit Association (NPAP) □Indian Tribe (INDN)	D. POBLIC CARE □Nursing Hom □Long Term C □Rehab. Facili □Public Health □Res. Child C	d. Sare (PBCR-NURS) ty (PBCR-TERM) ty (PBCR-RHAB) to Ctr. (PBCR-HCTR) are Ctr. (PBCR-RCCC)	HOSPITALS General (HOSP-GENI DTuberculosis (HOSP-TUBF OTHER (HOSP-OTHI	L) R) R)	
C	Instructions: With reference to page 23 entitle just Federal funding, then answer the question	d Funding Information, de s correctly for the situatio	stermine if the facilities are eligibl n. This section must be signed an	e for both Federal and State funding or d dated by the head of the organization		
	If eligible for both Federal and State Funding: Have you received a mini-audit grant before Have you previously applied for mini-audit f Do you wish to apply for mini-audit funding Date Name: Signature	? □ Yes, XXNo unding? XX Yes □ No ? □ Yes XXI No				
	If eligible for Federal funding only: Have you received a mini-audit grant before Have you previously applied for mini-audit f Do you wish to apply for mini-audit funding The 50% match for Federal funds will come	? ☐ Yes ☐ No unding? ☐ Yes ☐ No g? ☐ Yes ☐ No from: (Use additional she	ets if necessary.)			
				,		
UEST						
DIT G REO	Date					
UNI-AU	Signature.					

Check the type of energy report which was completed and submitted prior to this mini-audit report.

Elementary School Energy Report (Form No. ED-00444-02) Contract School Energy Report (Form No. EN-00041-01) Secondary School Energy Report (Form No. ED-00445-02)

D

Y REPORT

ENERGY CHECK-0

E

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

did not Based on actual records, the energy conservation operating and maintenance procedures listed in section K. save at least (did, did not) 20% of the building's energy consumption as specified in section I.

be the subject of a maxi-audit. (should, should not)

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information is addition 5 and the information referred to in section 5. I recommend that this building	should not
based upon the mormation in section is and the mormation refered to in section (, recommend that this burlong	(should, should not)

should not undergo further solar conversion analysis, and/or_ (should, should not) wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith Mini-Agditor's Name (Print or Type) 206 Komelall Sut Signature Rieke Carroll Muller Associates, Inc. Firm Name (if none, enter none)

P.O. Box 130

612-935-6901

October 27, 1980

Address

Phone

Date

Witnessed by:

Building Organizational Authority (Print or Type)

Signature

Date

MINI-AUDIT STATEMENTS

F	NAME	POSITION	ORGANIZATION
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Associates, Inc
	Dave Elzea	Building Maintenance	City of Bloomington
AUDIT			
G	BRIEF DESCRIPTION OF	GENERAL BUILDING CONDITION (i.e. type, an	d function)
z	MAJOR CHANGES PLAN	NED WITHIN NEXT 15 YEARS (i.e. demolition, re	habilitation, conversion from one building type to another)
MATIO	structural compon Wooden Rafters	ENTS OF ROOF (i.e. metal beams, wooden rafter	s, concrete)
BUILD	ROOFING MATERIAL (i.e Tar and Gravel	tar and gravel, shingles, tile)	
Ĥ	INSTRUCTIONS: Correct	ly answer the following questions for the building	being mini-audited.
	Is there open land adjace XØ Yes □ No	nt to the building?	
	Solar collectors need to be 3 p.m.? Roof: XIC Yes □ No South facing Wall:X	Plocated in an unshaded area. Is the reof of the built	ding and the south facing wall unshaded between the hours of 9 a.m. and
	If the roof or wall are part % of roof unshaded % of south facing wall u	tly shaded, what percentage of the surface is uns % unshaded%	haded?
	What is the overall shape square XX rectangl	of the building? e □ H-shaped □ E-shaped □ other (specif	/)
	Is the roof of the building X₩ flat □ pitched	flat or pitched?	
	If pitched, what is the cor	npass orientation of the ridgeline?	
	If pitched, what is the ang	gle that the roof makes with herizontal?	0
	Are there large obstructio □ Yes X₩ No	ons on the roof such as chimneys, rooms for mec	hanical equipment, ventilating units, water towers. etc?
	What is the exterior facin	g material for the south facing wall?	Face Brick
	What percentage of the s	outh facing wall is glass?5%	
	ls the building's space he XII Yes □ No	pating equipment located within or on the building	g? (A no answer indicates the equipment is in a separate building.)
	If the space heating equi	pment is inside the building, where is it located? Basement	
ENTIAL	ls the building's water he X Ø Yes □ No	bating equipment located within the building? (A	no answer indicates the equipment is in a separate building.)
R POT	If the water heating equip X ♀ Ground Floor □ f	pment is inside the building, where is it located? Basement D Other (specify)	
SOLA	Is the water heating system X	em a central system, does it consist of multiple u e Combination	nits, or is it a combination of the central and multiple units?

Instructions. Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

ENERGY TYPE Electricity	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE					
Electricity								
Fuel 1								
Fuel 2								
TOTAL	· · · · · · · · · · · · · · · · · · ·							
20% SAVINGS YEAR Fiscal Year								
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGI					

			· · · · · · · · · · · · · · · · · · ·
	Electricity		
s	Fuel 1		
AVING	Fuel 2		
20% S	TOTAL		

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1	Check two boxes in each categ	ory —		4-14 <u>8-75-</u> 100-100-100-100-100-100-100-100-100-10				na anta ana amin'ny tanàna mandritra dia kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia I
	Range of Electrical Savings —	X 🗴 0%	X 🗱 5%	0 10%	🛛 15%	20%	0 25%	other (specify)
	Range of Fuel Savings	0%	X10 5%	XXX 10%	0 15%	20%	25%	other (specify)

2 Calculate ranges of energy and cost savings -

			Range of Electrical Savings		
	% Range	Annual Electrical Consumption	Range of Energy Savings % Range	Annual Electrical Dollars Spent	Range of Electrical Dollars Savings
	lower bound% x	24,880 kwh =	kwh, %	× \$1136.42	- \$
	to upper bound <u>5</u> % x	<u>24,880</u> kwh =	to to <u>1244</u> kwh,%	x <u>\$1136.42</u>	to •• \$ <u>56.82</u>
3			Range of Fuel Savings		
	% Range	Annual Fuel Consumption	Range of Fuel Savings % Range	Annual Fuel Dollars Spent	Range of Fuel Dollars Savings
	lower bound <u>5</u> % x	15 <u>.3x10'</u> Btu =	7 <u>6.5x10</u> Btu, <u>5</u> %	× <u>\$_569,10</u>	= <u>\$ 28.45</u>
N	to		to to		to
IGS NATIO	upper bound 10 % x	15 <u>.3x10</u> Btu =	1 <u>5.3x10</u> Btu, <u>10</u> %	× <u>\$ 569,10</u>	= <u>\$ 56.91</u>
ESTIN	The mini-auditor is not respons not fall between the roughly es	ible if actual savings resulting the standard savings which are	ng from the implementation of the e specified.	nergy conservation opportu	nities listed in section I do

K Instructions. Read through the list of energy conservation opportunities previded. As you read through the items, list below those items a already been undertaken in your facility. The description of the past energy conservation action should contain the specific building loca the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conservation number and are not on the list provided should also be included along with their appropriate classification nucleasification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.							
	CLAS	SIFICATION		OPTIONAL:	OPTIONAL.	· ·	
ITEM NO.	MAJO	NO. R SUB S CLASS	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATIO	
_							
						ā	
			×				
			•				

Note Reproduce this page as necessary

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

	1			OPTIONAL: OPTIONAL		<u> </u>		
					ENERGY			
NO.	MAJOR CLASS	U. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY	COST SAVINGS	DATE OF IMPLEMENTATION		
1	1	1	Keep all controls free of dust.					
2	2	1	Add insulation in attic spaces.					
3	2	2	Weatherstrip all exterior doors.					
4	2	8	Caulk all cracks that allow air and moisture into the building.					
5	2	10	Inspect window closing and locking devices to insure a tight window.					
6	2	10	Replace single glased windows with double glazed thermopanes.					
7	3	1	Check the calibration of all control and devices for proper settings and	ers				
			operations.					
8	3	1	65°F maximum occupied, 60°F maximum unoccupied.					
9	3	1	Consider turning off heat when the building is unoccupied for a long					
			period of time.					
10	3 2 Clean and remove obstructions from		Clean and remove obstructions from a room air outlets and inlets (diffuse	1				
			registers and grillers). They should be kept clean and free of all dirt					
			and foreign materials.					
11	3	3	Inspect and lubricate bearings on fa	ns.				
12	3	3	Inspect drive belts on fans. Adjust					
			proper operation.					
13	3	3	Inspect fans for normal operation.					
14	3	3	Inspect ductwork for air leakage. Se	a 1				
15	4	1	Instruct occupants and maintenance personnel to switch off all lights					
			when they are not needed.					
16	4	3	Clean fixtures and lamps regularly.					
17	4	3	Replace lamps in groups before they burn out to maintain higher average					
1			light output per fixture.					
18	4	4	Use lower wattage lamps to provide t	he				

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW I

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

				OPTIONAL: OPTIONAL:			
ITEM NO.	CLASSIF N MAJOR	ICATION O. SUB	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION	
19	CLASS 4	CLASS 4	Allow part of a lighting system to be	2			
			turned off, while maintaining the necessary light.				
20	5	1	Keep records of the operating schedu	le,			
			of any new equipment that affects end consumption of efficiency of the built	rgy d-			
			ing. These records will indicate the	90			
21	5	1	Review the record books on a regular				
22	6	1	Adjust water supply to 100 ⁰ F				
23	6	2	All electric heating equipment shoul be checked for corroded elements and	d			
			loose connections adn repaired as re	quired.			
24	6	2	Shut down heating equipment when the hot water is not required.				
25	7	3	Clean air-sides, remove soot, and scrape scale in forced warm air furn	aces.			
26	7	3	Adjust oil burner efficiencies to pr stack temperature, CO, content and	oper			
			excess air settings. Adjust setting to maximum of 400 -500 F of stack				
			temperature and a minimum of 10% CO at full load conditions. Excess air ²				
			through a boiler can wast 10% to 30% of the fuel. Accurate testing is				
			essential for the correct burner adj ment for maximum efficiency. Use	ust-			
			appropriate instruments and test combustion as part of a planned gene	ral			
			maintenance program.				
27	7	4	Clean filters regularly in forced wa air units to reduce the operating ti	rm me			
			of the furnace.				
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Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW E

MINI-AUDIT REPORT

Λ	BUILDING NAME		NAME OF ORGANIZATION		DATE
	Dred Scott Ballfield She	lter	City of Blooming	gton	9/30/80
1	BUILDING ADDRESS		ADDRESS		
	10820 West Old Shakopee	Road	2215 West 01d S	hakopee Roa	d
	CITY	ZIP CODE	CITY		ZIP CODE
N.	Bloomington, MN	55431	Bloomington, MN		55431
TTA	PERSON COMPLETING FORM	TELEPHONE	CONTACT PERSON		TELEPHONE
ŭā	Randy Smith	935-6901	Arthur Jensen		881-5811
					.
B	Instructions: For blocks 1 and 2 check the box describes the building type and then within th	which best fits the buildin e category check off the	ng ownership conditions. For block sub category befitting the building	c 3 determine which ng function.	of the four categories
		3a. SCHOOLS	C.	LOCAL GOVERN	IMENT
		DElementary	(SCHL-ELM)	DOffice	(LOCG-OFFC)
	-Non-Front Association (NAP)		v. (SCHL-POST)	Service	(LOCG-SERV)
		Vocational		Library Dedice	(LOCG-LBRY) (LOCG-PLCE)
w	County (CNTY)		ion (SCHL-ADMN)	Fire	(LOCG-FIRE)
8	Dicity (CITY)		(SCHL-OTHR)		(LOCG-OTHR)
	State (STAT)	b. PUBLIC CARE	E d.	HOSPITALS	
ŞĘ	Public School (PUSC)	UNursing Ho	me (PBCR-NURS) Care (PBCR-TERM)	General	(HOSP-GENL)
	Non-Profit Association (NPAP)	Rehab. Faci	lity (PBCR-RHAB)		(HOSP-TUBH)
120	DIndian Tribe (INDN)	Des Child (th Ctr. (PBCR-HCTR) Care Ctr. (PBCR-BCCC)		. ,
	Do you wish to apply for mini-audit funding Date Name: Signature If eligible for Federal funding only: Have you received a mini-audit grant before Have you previously applied for mini-audit funding The 50% match for Federal funds will come	? ☐ Yes ☐ No unding? ☐ Yes ☐ No unding? ☐ Yes ☐ No g? ☐ Yes ☐ No from: (Use additional sh	- - o neets if necessary.)		· ·
AUDIT ING REQUEST	Date		-		
-INI	Signature.		_		
Σũ					

Check the type of energy report which was completed and submitted prior to this mini-audit report.

Elementary School Energy Report (Form No. ED-00444-02) Secondary School Energy Report (Form No. ED-00445-02)

XX Existing Building Energy Report (Form No. EN-00041-01)

D

Y REPORT

ENERGY CHECK-O

E

MINI-AUDIT STATEMENTS If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K	did notsave at least
20% of the building's energy consumption as specified in section I.	(did, did not)

Based upon my observation of the physical characteristics of this building and the building's major energy using systems. I recommend that this should not ______ be the subject of a maxi-audit. (should should not)

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section 5 and the	information referred to in section	E. I recommend that this building	Shourd not	
Dased upon the mormation in section E and the	information referred to in section	r, meconiment mattins building	(should, should not)	
undergo further solar conversion analysis and	_{/or} should not	undergo further analysis of the	renewable resources	waste
wind, wood. (Circle proper resources)	(should, should not)			

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith Mini-Auditor's Name (Print or Type)
Randy Smith 206
Signature /
Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)
PO Box 130 Hopkins, MN 55343
Address
(612) 935-6901
Phone
September 30, 1980
Date

Witnessed by:

Building Organizational Authority (Print or Type)

Signature

Date

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F	NAME	POSITION	ORGANIZATION
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
	Dave Elzea	Building Maintenance	City of Bloomington
		· · · · · · · · · · · · · · · · · · ·	
G	BRIEF DESCRIPTION OF GEI Good, Restrooms	NERAL BUILDING CONDITION (i.e. type, and func s and Concession Stand	tion)
z	major changes planned	WITHIN NEXT 15 YEARS (i.e. demolition, rehabilit	ation, conversion from one building type to another)
NG	STRUCTURAL COMPONENTS	S OF ROOF (i.e. metal beams, wooden rafters, cond	crete)
UILDI VFORM	ROOFING MATERIAL (i.e. tar	and gravel, shingles, tile)	
@ =	lar and Gravel		
H	INSTRUCTIONS: Correctly an	swer the following questions for the building being	mini-audited.
	Is there open land adjacent to	the building?	
	Solar collectors need to be loca 3 p.m.? Roof: ⅩⅩYes □ No South facing Wall: ⅩⅩYes	ited in an unshaded area. Is the roof of the building ar	nd the south facing wall unshaded between the hours of 9 a.m. and
	If the roof or wall are partly st % of roof unshaded % of south facing wall unsh	naded, what percentage of the surface is unshaded % aded%	?
	What is the overall shape of th □ square X₩ rectangle □	ne building? ❑ H-shaped □ E-shaped □ other (specify)	
	Is the roof of the building flat ₩tlat □ pitched	or pitched?	
	If pitched, what is the compas	s orientation of the ridgeline?	
	If pitched, what is the angle th	nat the roof makes with horizontal?	
	Are there large obstructions o	on the roof such as chimneys, rooms for mechanica	I equipment, ventilating units, water towers, etc?
	What is the exterior facing ma	aterial for the south facing wall?Face	Brick
	What percentage of the south	facing wall is glass?%	
	Is the building's space heating XXYes □ No	g equipment located within or on the building? (A r	no answer indicates the equipment is in a separate building.)
	If the space heating equipmen XXGround Floor	nt is inside the building, where is it located? ment □ Roof □ Other (specify)	
NTIAL	ls the building's water heating XXYes □ No	g equipment located within the building? (A no ans	wer indicates the equipment is in a separate building.)
MATIO	If the water heating equipmer	nt is inside the building, wher∋ is it located? ment □ Other (specify)	
SOLAR	ls the water heating system a ₩Centrai □ Multiple	central system, does it consist of multiple units, or Combination	r is it a combination of the central and multiple units?

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

	BASE PEF	RIOD YEAR	Fiscal Year	
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE	
Electricity				
Fuel 1				
Fuel 2				
TOTAL				

		20% SAVIN	IGS YEAR	Fiscal Year
	ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
	Electricity			
s	Fuel 1			
20% SAVING	Fuel 2			
	TOTAL			

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category -									
	Range of Electrical Savings —	XX 0%	X21 5%	□ 10%	□ 15%	20%	□ 25%	other (specify)	
	Range of Fuel Savings —	□ 0%	5 %	□ 10%	□ 15%	□ 20%	25%	□ other (specify)	

Range of Electrical Savings

Calculate ranges of energy and cost savings ---

G-122-1

2

Range of Electrical Annual Electrical Range of Energy Annual Electrical % Range % Range Consumption **Dollars Savings** Savings **Dollars Spent** 0_" 122560 0 s 11069.84 0 0 lower bound \$ kwh % kwh to to to to 6128 5 122560 5 s 11069.84 _ <u>s 553.50</u> kwh upper bound kwh. % 3 Range of Fuel Savings NO FUEL ALL ELECTRIC BUILDING Annual Fuel Range of Fuel Annual Fuel Range of Fuel % Range Consumption Savings % Range **Dollars Spent Dollars Savings** lower bound _ _ % _ Btu Btu. % \$ х to to to to SAVINGS ESTIMATION upper bound _ _ % .Btu _ Btu, __ _% х = x \$ = \$ -The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.

				OPTIONAL:	OPTIONAL: OPTIONAL:		
ITEM NO.	CLASSIF N MAJOR CLASS	ICATION O. SUB CLASS	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION	
1	5	2	Routine Maintenance Schedule				
	1		Ø				
	1		,				
	1		,,				
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Note Reproduce this page as necessary

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Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification acheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

F				OPTIONAL: OPTIONAL:		
ITEM NO.	CLASSIF NO MAJOR CLASS	ICATION D. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Keep motors clean to make cooling easier.			
	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
6	2	1	Check the amount of insulation in the ceiling.			
7	2	1	Add insulation in attic spaces if needed.			
8	2	8	Insulate walls with rigid insula- tion on inside and/or outside surfaces, or place loose fill insulation in wall cavities if needed.			
9	2	10	Replace signle glazed windows with double glazed thermopanes.			
10	3	1	Check the calibration of all controllers and devices for proper settings and operations.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

	Instructions suggested n record the i opportunity may also bu conservatio implemente	a: Read thronaintenanco tem numbe should cor e included. n opportur d. This sec	ough the energy conservation recommendation list provided. Then e and operational changes, and any other low cost energy conservatio or, the classification number of the recommendation, and the new mintain the specific building location where the recommendation applies, For those other recommendations, assign an appropriate classificat inities listed on pages 25 through 37. The date of implementation s tion of the mini-audit report should be completed by the mini-audit	walk throug n measures, ni-audit opp if applicable ion number should only team during OPTIONAL:	gh the build that pertain to ortunity. The Any recomming from the cla be complete the building OPTIONAL	ing with the list. Examine the to the facility. As you go along, e description of the mini-audit mendation not found on the list asification scheme for energy ed as the recommendation is y walk-through.
ITEM NO.	CLASSIF N MAJOR CLASS	ICATION O. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES		ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
10	3	1	Check the calibration of all			
			proper settings and operations.			
11	3	1	65 ⁰ F maximum occupied, 60 ⁰ F maximum unoccupied during the heating			
		·····	season.			
12	4	1	Instruct occupants and maintenance personnel to switch off all lights			· · · · · · · · · · · · · · · · · · ·
			when they are not needed.			
13	4	3	Clean fixtures and lamps regularly.			
14	4	3	Replace lamps in groups before they burn out to maintain higher average light output per fixture.			
15	6 4	4	Use lower wattage lamps to provide the necessary illumination.			
16	5 4	4	Allow part of a lighting system to be turned off, while maintaining			
			the necessary right.			
17	/ 5	1	Keep records of the operating schedule, monthly energy consumptio	n		
			that affects energy consumption of efficiency of the building.	 		
			These records will indicate the impact of energy conservation measures.			
						:
L	l	L		1		

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

					OF HOMAL		
ITEM NO.	CLASSIF NO MAJOR CLASS	CATION D. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION	
18	5	1	Review the record books on a				
			regular basis.				
19	5	2	Establish a specific maintenance schedule for each building to				
			specific building operate at maximum efficiency.				
20	6	1	Adjust water supply to 100 ⁰ F for all except special requirements (dishwasher supply units, etc.)				
21	6	2	All electric heating equipment should be checked for corroded elements and loose connections				
			and repaired as required.				
			· · · · · · · · · · · · · · · · · · ·				
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Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

MINI-AUDIT REPORT

FORM NO. MIN-01

A	BUILDING NAME MOIR PARK SHELTER #2		NAME OF ORGANIZATION CITY OF BLOOMINGTON	DATE 10/24/80	
	BUILDING ADDRESS 2216 West 104th Street		ADDRESS 2215 West Old Shakopee Road		
VCT	city Bloomington	zip code 55431	сіту Bloomington	zip code 55431	
CONT/ DATA	PERSON COMPLETING FORM Randy Smith	TELEPHONE 935-6901	Contact person Arthur Jensen	telephone 881-5811	
B	Instructions: For blocks 1 and 2 check the box describes the building type and then within th	which best fits the building e category check off the s	g ownership conditions. For block 3 determine which sub category befitting the building function.	ch of the four categories	
	1. OWNERSHIP TYPE Prublic (PUB) Non-Profit Association (NAP)	3a. SCHOOLS □Elementary □Secendary □Coll. or Univ. □Vocational	C. LOCAL GOVER (SCHL-ELM) □Office (SCHL-SECD) □Storage (SCHL-POST) XIV Service (SCHL-VOCL) □Library	(LOCG-OFFC) (LOCG-OFFC) (LOCG-STRG) (LOCG-SERV) (LOCG-LBRY)	
DE	2. ULTIMATE OWNER □County (CNTY) X⊉City (CITY)	DEducation Ag DAdministratic DOTHER	gency (SCHL-ADMN)	(LOCG-PLCE) (LOCG-FIRE) (LOCG-OTHR)	
BUILDING ELIGIBILITY CC	☐ Township (TOWN) ☐ State (STAT) ☐ Public School (PUSC) ☐ Private School (PRSC) ☐ Non-Profit Association (NPAP) ☐ Indian Tribe (INDN)	b. PUBLIC CARE □Nursing Hom □Long Term C □Rehab. Facili □Public Healti □Res. Child C	d. HOSPITALS d. HOSPITALS Care (PBCR-TERM) □General ity (PBCR-RHAB) □OTHER n Ctr. (PBCR-HCTR) are Ctr. (PBCR-RCCC)	(HOSP-GENL) 5 (HOSP-TUBR) (HOSP-OTHR)	
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	L			
C	Instructions: With reference to page 23 entitle just Federal funding, then answer the question	d Funding Information, do s correctly for the situation	etermine if the facilities are eligible for both Fede n. This section must be signed and dated by the h	ral and State funding or ead of the organization	
	Have you received a mini-audit grant before Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date. Name: Signature. If eligible for Federal funding only: Have you received a mini-audit grant before	9? U Yes XXNo unding? XX Yes U No ? U Yes XXNo	-		
	Do you wish to apply for mini-audit i Do you wish to apply for mini-audit fundin The 50% match for Federal funds will come	funding? Li¥es LiNo g? Li¥es LiNo from:(Use additional sho	o eets if necessary.)		
FOUEST	Date		_		
AUDIT	Name		-		
MINI-	Signature.		-		
2ŭ	1				

Check the type of energy report which was completed and submitted prior to this mini-audit report.

כ	Elementary S	chool Energy	Report	(Form No.	ED-00444-02)
ъ.	<u> </u>				

Secondary School Energy Report (Form No. ED-00445-02) XID Existing Building Energy Report (Form No. EN-00041-01)

ENERGY REPORT CHECK-OFF

E

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K_		save at least
20% of the building's energy consumption as specified in section I.	(did, did not)	

Based upon my observation of the physical characteristics of this building and the building's major energy using systems. I recommend that this SIOU IC NOC be the subject of a maximudit be the subject of a maxi-audit. (should, should not)

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section E. Liscommand that this building	should not
based upon the mornation in section 2 and the mornation referred to in section 1, recommend that this building	(should, should not)

should not undergo further solar conversion analysis, and/or_ (should, should not) wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith	
Mini-Anditor's Name (Print or Type)	206
Signature	200
Rieke Carroll Muller Asso	<u>ciates, Inc</u> .
Firm Name (if none, enter none)	
P.O. Box 130	

Witnessed by:

Building Organizational Authority (Print or Type)

did not

Signature

Date

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Ξ	F.	l
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Address

Phone

Date

612-935-6901

October 29, 180

C	NAME	POSITION	ORGANIZATION	
r				
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Asso	c. Inc.
	Dave Elzea	Building Maintenance	City of Bloomington	
		ſ		
AUDIT				
G	BRIEF DESCRIPTION OF G Good, Warming	ENERAL BUILDING CONDITION (i.e. type, and function House	n)	
	MAJOR CHANGES PLANNE	ED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation)	ion, conversion from one building type to another)	<u>, , , , , , , , , , , , , , , , , , , </u>
NOL	NONE STRUCTURAL COMPONEN	TS OF ROOF (i.e. metal beams, wooden rafters, concre	te)	
DINO	Wooden Rafter	S		
INF C	Tar and Grave			
		·		
H	INSTRUCTIONS: Correctly	answer the following questions for the building being r	ini-audited.	
	Is there open land adjacent	to the building?		· · · · · · · · · · · · · · · · · · ·
	Solar collectors need to be lo 3 p.m.? Roof: □ Yes ØXNo South facing Wall: □ Ye	cated in an unshaded area. Is the roof of the building and $_{ m NS} X $ No	the south facing wall unshaded between the hours of §	9 a.m. and:
	If the roof or wall are partly % of roof unshaded4 % of south facing wall uns	shaded, what percentage of the surface is unshaded?		
	What is the overall shape of XØ square □ rectangle	the building? H-shaped E-shaped other (specify)		
	Is the roof of the building fla X₩ flat □ pitched	at or pitched?		
	If pitched, what is the comp	ass orientation of the ridgeline?		
	If pitched, what is the angle	that the roof makes with horizontal?		
3 1	Are there large obstructions	on the roof such as chimneys, rooms for mechanical	quipment, ventilating units, water towers, etc?	
	What is the exterior facing i	material for the south facing wall? Face Br	ck	
	What percentage of the sou	th facing wall is glass? <u>5</u> %		
	ls the building's space heat XII Yes □ No	ing equipment located within or on the building? (A no	answer indicates the equipment is in a separate bu	ilding.)
	If the space heating equipm	nent is inside the building, where is it located? sement		
ENTIAL	Is the building's water heati X	ing equipment located within the building? (A no answ	r indicates the equipment is in a separate building)
R POT	If the water heating equipm X A Ground Floor Bas	ent is inside the building, where is it located? sement		
SOLA	ls the water heating system X	a central system, does it consist of multiple units, or i	it a combination of the central and multiple units?	
·····				

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section. BASE PERIOD YEAR Fiscal Year **BTU USAGE** ENERGY TYPE CONVERSION FACTOR ENERGY USAGE Electricity Fuel 1 Fuel 2 TOTAL 20% SAVINGS YEAR Fiscal Year **BTU USAGE** ENERGY TYPE ENERGY USAGE CONVERSION FACTOR Electricity Fuel 1 20% SAVINGS Fuel 2 TOTAL Instructions: This section is to be completed by the mini-auditor after the walk-thru pertion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report. 1 Check two boxes in each category ---Range of Electrical Savings - XX0% XX5% 0 10% 15% 20% 25% □ other (specify) 0% XX 5% X 10% 0 15% Range of Fuel Savings ----0 20% 0 25% O other (specify) 2 Calculate ranges of energy and cost savings -**Range of Electrical Savings** Range of Electrical **Annual Electrical** Range of Energy Annual Electrical % Range Dollars Savings Dollars Spent % Range Consumption Savings s 222.41 0 0 2476 0 0 lower bound kwh 0% kwh to to to to , 11.13 123.8 5 2476 222.41 5 kwh upper bound ٩4 kwh 3 Range of Fuel Savings Annual Fuel Range of Fuel Annual Fuel Range of Fuel Savings 6 % Rance Consumption % Range Dollars Savings **Dollars Spent** 23.6x10[′]_{Btu} 632.28 31.61 5 5 lower bound to to SAVINGS ESTIMATION 63.23 23.6x10 10 632.28 10 23.6x10 upper bound _ The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do

not fall between the roughly estimated ranges which are specified.

		ICATION I		OPTIONAL	OPTIONAL:	r
TEM NO.	MAJOR	O. SUB	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATIO
	CLASS	CLASS				
	+					
	<u>+</u>					
	<u>†</u>					· · · · · · · · · · · · · · · · · · ·
	1		· · · · · · · · · · · · · · · · · · ·			
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Note Reproduce this page as necessary

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number for the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

F				OPTIONAL:	OPTIONAL		
	CLASSIFICA				ENERGY		
ITEM	MAIOR	C. SUB	NEW MINI-AUDIT OPPORTUNITIES		COST	DATE OF IMPLEMENTATION	
NU.	CLASS	CLASS		SAVINGS	SAVINGS		
1	1	1	Keen all controls free of dust				
]			Neep all concruis free of aust.				
<u>}</u>	2 1 Add inculation between waftere						
2	2 2 1 Add insulation between rafters.						
3	2	2	Weatherstrip all exterior doors.				
	3 2 2 weatherstrip all exterior doors.						
Λ	2	0	Cault all availe that allow and				
4	2	0	moisture into the building				
5	2	10	Inspect window closing and locking				
	6		0 Inspect window closing and locking devices to insure a tight window				
			devices to msure a trunt window.				
6	2		Replace high windows with insulatio	ĥ.			
			wall panels.				
7	3	1	Check the calibration of all contro	llers			
			and devices for proper settings and				
			operations				
0	2		GEOF maximum accuried 600 maximum		······		
0	3		os r maximum occupied, ou r maximum				
			unoccupied.				
9	3		Consider turning off heat when buil	ding			
	<u> </u>		is unoccupied for a long period of	time			
1 10	3	2	Clean and remove obstructions from				
-			all room air outlets and inlets (di	fusers			
1			registers and grillers) They shoul	H	ľ		
			he kent clean and free of all dirt	r			
			and foreign matorials		1		
			and foreign materials.				
11	-		Turner to a late to be and the contract of the				
	3	3	inspect and lubricate bearings on t	ans.			
				+	<u> </u>		
12	3	3	Inspect drive belts of fans. Adjust				
	ļ		or replace as necessary to ensure				
			proper operation.				
			FFFF				
13	3	3	Inspect fans for normal operation				
			inspece fans for normal operación.				
1/	2	2	Increat ducturely for air lockage		İ	4 ₆	
14	1 3	l 3	Inspect auctwork for air leakage.				
1 5	1	1	Instruct populate and maintenance	¥•	1	1	
15	4		instruct occupants and maintenance	1			
	+	├ ───┤	personnel to switch off all lights			+	
1			when they are not needed.				
		<u> </u>					
16	4	3	Clean fixtures and lamps regularly.				
			· · · · · · · · · · · · · · · · · · ·				
17	4	3	Replace lamps in groups before they				
		Ŭ	burn out to maintain higher average				
		1	light output per fixture.	1	ľ		
	1						
18	4	4	lise lower wattage lamos to provide	+	+	· ·	
.0			the necessary illumination				
1 10	1	1	Allow worth of alteration over the l	1			
19	4	4	A now part of alighting system to b	e e			
	1	J	<u>I turned off, while maintaining the</u>	ļ	<u> </u>		

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW PPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

	· · · · · · · · · · · · · · · · · · ·				OPTIONAL		
ITEM	CLASSIF	ICATION O.		ENERGY	ENERGY	DATE OF IMPLEMENTATION	
NO.	MAJOR CLASS	SUB CLASS		SAVINGS	SAVINGS		
			necessary light.				
20	5	1	Keep records of the operating sched	ule,			
	<u> </u>		monthly energy consumption and purc	nase	ļ		
			or any new equipment that arrects				
	+		the building. These records will				
			indicate the impact of energy conse	r-			
			vation measures.		<u></u>		
21	5	1	Review the record books on a regula basis.	r			
22	6	1	Adjust water supply to 100 ⁰ F.				
23	6	2	The burner system of fossil-fuel				
	<u></u>		water heaters should be kept clean				
			and in good operating condition.				
24	6	2	Shut down heating equipment when the hot water is not required.	ne			
25	7	3	Clean air-sides, remove soot, and				
			furnaces.	an a			
26	7	3	If the firing rate of gas or oil burners is too high, it causes show	∽t.			
			cycling and excessive fuel consumption Too low a rate requires constant	tion.			
			operating and delivers inadquate he to the spaces.	at			
27	7	4	Clean filters regularly in forced we air units to reduce the operating	varm			
			time of the furnace.				
28	7	4	Turn off gas pilots for furnaces, boilers, and space heaters during	the			
			non-heating months and during long unoccupied periods.				
 			·				
.	L						

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

_				
A	BUILDING NAME POPLAR BRIDGE PARK SHELTER		NAME OF ORGANIZATION CITY OF BLOOMINGTON	DATE 10/24/80
	BUILDING ADDRESS 8480 Morris Avenue South		ADDRESS 2215 West Old Shakopee Ro	ad
ACT	city Bloomington	zip code 55431	сіту Bloomington	zip code 55431
CONT	PERSON COMPLETING FORM Randy Smith	telephone 935-6901	Contact person Arthur Jensen	telephone 881-5811
B	Instructions: For blocks 1 and 2 check the box describes the building type and then within th	which best fits the building e category check off the s	g ownership conditions. For block 3 determine whi sub category befitting the building function.	ch of the four categories
	1. OWNERSHIP TYPE IIXKublic (PUB) ONon-Profit Association (NAP)	3a. SCHOOLS Elementary Secendary Coll. or Univ.	c. LOCAL GOVEL (SCHL-ELM) Doffice (SCHL-SECD) Storage (SCHL-POST) XService (SCHL-VOCL)	RNMENT (LOCG-OFFC) (LOCG-STRG) (LOCG-SERV)
CODE	2. ULTIMATE OWNER County (CNTY) XYCity (CITY) Township (TOWN)	Deducation Ag Deducation Ag DAdministratio DOTHER b. PUBLIC CARE	jency (SCHL-ADMN) Deolice on (SCHL-ADMN) DFire (SCHL-OTHR) DOTHER	(LOCG-PLCE) (LOCG-FIRE) (LOCG-OTHR)
BUILDING	□Public School (PUSC) □Private School (PRSC) □Non-Profit Association (NPAP) □Indian Tribe (INDN)	□Nursing Hom □Long Term C □Rehab. Facili □Public Health □Res. Child Ci	are (PBCR-NURS) □General are (PBCR-TERM) □Tuberculos: ty (PBCR-RHAB) □OTHER to Ctr. (PBCR-RCCC) are Ctr. (PBCR-RCCC)	(HOSP-GENL) s (HOSP-TUBR) (HOSP-OTHR)
C	Instructions: With reference to page 23 entitle just Federal funding, then answer the question	d Funding Information, de s correctly for the situatio	termine if the facilities are eligible for both Fede n. This section must be signed and dated by the f	ral and State funding or read of the organization
	If eligible for both Federal and State Funding: Have you received a mini-audit grant before Have you previously applied for mini-audit f	? □Yes XXX No unding? XXX Yes □No		
	Do you wish to apply for mini-audit funding	? DYes XXX No		
	Name:			
	Signature.			·
	If eligible for Federal funding only: Have you received a mini-audit grant before	?		
2	The 50% match for Federal funds will come	unding? Li Yes Li No]? Li Yes Li No from: (Use additional she	ets if necessary.)	j.
ļ.				
2 2 1				
er kalle,				
_				
OUES	Date			
NUDIT NG RE	Name			
MINI-4	Signature			

Check the type of energy report which was completed and submitted prior to this mini-audit report.

	Elementary S	chool Energy	Report (Form	No.	ED-00444-02)
,Q,	Secondary So	chool Energy	Report (Form	No.	ED-00445-02)

D

Y REPORT

ENERGY I

E

MINI-AUDIT STATEMENTS Secondary School Energy Report (Form No. ED-00445-02) Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities. listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K	did	not	_save at least
20% of the building's energy consumption as specified in section I.	(did, i	did not)	

Should not the physical characteristics of this building and the building's major energy using systems, I recommend that this (should, should not)

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section F and the information referred to in section F. I recommend that this building	should not
succession the mormation in accion E and the mormation referred to in section 7, recommend that this building	(should, should not)

undergo further solar conversion analysis, and/or <u>should not</u> undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources) (should, should not)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Kondell Surt:	206
Signature	
Rieke Carroll Muller A	Associates. Inc.
Firm Name (if none, enter none)	
P.O. Box 130	
Address	
612-935-6901	,
Phone	
October 24, 1980	
Date	

Witnessed by:

Building Organizational Authority (Print or Type)

Signature

Date

F	NAME	POSITION	ORGANIZATION					
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Mulle	r Associates, Inc				
	Dave Elzea	Building Maintenance	City of Bloomingt	on				
		{						
UDIT EAM								
4-1								
G	BRIEF DESCRIPTION OF G	ENERAL BUILDING CONDITION (i.e. type, and fur	iction)					
z	GOOD, WATMING HOUSE MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another) None							
NMATIO	STRUCTURAL COMPONEN Wooden Rafters	TS OF ROOF (i.e. metal beams, wooden rafters, co	ncrete)					
BUILD	ROOFING MATERIAL (i.e. ta Tar and Gravel	ar and gravel, shingles, tile)						
H	INSTRUCTIONS: Correctly a	answer the following questions for the building being	ng mini-audited.					
	Is there open land adjacent t	to the building?		1				
	Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. an 3 p.m.? Roof: XXyes INO South facing Wall: XXYes INO							
	If the roof or wall are partly shaded, what percentage of the surface is unshaded? % of roof unshaded% % of south facing wall unshaded%							
	What is the overall shape of the building? Disquare □ rectangle □ H-shaped □ E-shaped □ other (specify)							
	Is the root of the building flat or pitched?							
	If pitched, what is the compass orientation of the ridgeline?							
	If pitched, what is the angle that the roof makes with horizontal?•							
	Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?							
	What is the exterior facing material for the south facing well? Face Brick							
What percentage of the south facing wall is glass? 0 %								
	Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate buil AXYes							
	If the space heating equipm	ent is inside the building, where is it located? ement						
ENTIAL	Is the building's water heati ₩Yes □ No	ng equipment located within the building? (A no ar	nswer indicates the equipment is in a set	parate building)				
RMATIC	If the water heating equipm	ent is inside the building, where is it located? sement						
SOLA	Is the water heating system	a central system, does it consist of multiple units, Combination	or is it a combination of the central and	multiple units?				

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section. BASE PERIOD YEAR Fiscal Year **BTU USAGE** ENERGY TYPE CONVERSION FACTOR ENERGY USAGE Electricity Fuel 1 Fuel 2 . TOTAL 20% SAVINGS YEAR Fiscal Year _ **BTU USAGE** ENERGY TYPE ENERGY USAGE CONVERSION FACTOR Electricity Fuel 1 SAVINGS Fuel 2 2 2 2 2 2 2 2 TOTAL Instructions: This section is to be completed by the mini-auditor after the walk-thru pertion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report. 1 Check two boxes in each category -Range of Electrical Savings - XX0% XX 5% □ 10% 0 15% □ 20% 25% other (specify) Range of Fuel Savings ---0% XX 5% XX10% 0 15% 20% 0 25% d other (specify) 2 Calculate ranges of energy and cost savings -**Range of Electrical Savings** Range of Electrical Annual Electrical Range of Energy Annual Electrical % Range Consumption Savings % Range **Dollars Spent** Dollars Savings <u>8576</u> kwh 0 s 378.18 0 0 0 lower bound . ~~~ % ___ kwh, __ % \$ to to to to 428.8 kwh, 8576 kwh s <u>18.91</u> <u>\$ 378.18</u> 5 5 1.7 upper bound 3 Range of Fuel Savings Annual Fuel Range of Fuel Annual Fuel Range of Fuel % Range Consumption Savings % Range **Dollars Spent Dollars Savings** 11.9x10tu 23.7x10⁶Btu s 636.99 5 5 s 31.85 lower bound to to to 23.x10⁶ Btu. INGS $23.7 \times 10^{/}_{Btu}$ 10 10 636.99 63.70 upper bound SAVI The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do

not fall between the roughly estimated ranges which are specified.

cii se	the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. This section of the mini-audit report should be completed by building personnel prior to the welk-through by the mini-auditor.						
	CLASSIF	ICATION					
ITEM NO.	MAJOR CLASS	O. SUB	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION	
die The Official Sciences			9-19-1999) - 1999) - 1994 - 1995 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - - -				
			антана у бита протокология у соколо на полотоко на на селотоко су селотоко на тако на од 1999 година на 1999 и Мани	-		2 	
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Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through. OPTIONAL:

				UP HUNAL	UPTIONAL	
17000	CLASSIFICATION			ENERGY	ENERGY	
NO.	MAJOR CLASS	U. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY	COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	2	2	Add insulation in between rafters			
3	2	2	Weatherstrip all exterior doors			
4	2	8	Caulk all cracks that allow air and moisture into the building.			
5	2	10	Inspect window closing and locking devices to insure a tight window.			
6	2	10	Replace single glazed windows with double glazed thermopanes.			
7	2	11	Replace high windows with insulation wall panels.			
8	3	1	Check the calibration of all control and devices for proper settings and	lers		
			operations.			
9	3	1	65 ⁰ F maximum occupied, 60 ⁰ F maximum			
10	3	1	Consider turning off heat when build	-		
			of time.			
11	3	2	Clean and remove obstructions from a room air outlets and inlets (diffuse	11 rs.		
			registers and grillers). They should be kept clean and free of all dirt			
			and foreign materials.			
12	3	3	Inspect and lubricate bearings on fa	hs		
13	3	3	Inspect fans for normal operation.			
14	3	3	Inspect ductwork for air leakage. Se all leaks by taping and caulking.	a1		2
15	4	1	Instruct occupants and maintenance personnel to switch off all lights w	nen		
			they are not needed.			
16	4	3	Clean fixtures and lamps regularly.			
17	4	3	Replace lamps in groups before they burn out to maintain higher average			
			light output per fixture.			
18	4	4	Use lower wattage lamps to provide the necessary illumination	he		· · ·
19	4	4	Allow part of a lighting system to be turned off, while maintaining the			
		Contraction of the local sector of the local s		and the second secon	and and the state of the second s	

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW PPORTUNITIES
NEW COPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

				OPTIONAL:	OPTIONAL	
	CLASSIFICATION		ON		ENERGY	
ITEM	N	Э.	NEW MINI-AUDIT OPPORTUNITIES		COST	DATE OF IMPLEMENTATION
NO.	MAJOR	SUB		SAVINGS	SAVINGS	
	CLASS	CLASS				
			necessary light.			
					and a second state of the descent of the	
20	5	1	Keep records of the operating schedu	le		
			monthly energy consumption and purch	ase		
			of any new equipment that affects en	erav		
			consumption of efficiency of the			
	1	وي من المعار معار المعالم الم	building Those records will indicat	<u> </u>		
			building. mese records will indicat			
			the impact of energy conservation me	asures		
21	5		Review the record books on a regular	1		
			_basis			
22	6	1	Adjust water supply to 100°F			
			•	``		-
23	6	2	The burner system of fossil-fuel wat	er		
		-	hesters should be kent clean and in	anod		
			meaners shound be republic the	l'		1
			operating condition.			
24	6	2	Shut down heating equipment when the			
			hot water is not required.	h		
25	7	3	Clean air-sides, remove soot, and			
	ļ		<u>scrape scale in forced warm air furr</u>	aces.		
26	7	3	If the firing rate of gas burners is			
			too high, it causes short cycling ar	d		
1		[excessive fuel consumption. Too low			
			a rate requiries constant operating a	nd		
	<u> </u>		delivers indequate beat to the space		1	
			a derivers madequate near to the space	103		
	1					
21	/	3	Clean filters regularly in forced wa	j rm		
	+	<u> </u>	air units to reduce the operating t	ime		
			of the furnace.			
		L				
28	7	3	Turn off gas pilots for furnaces, be	dilers		
			and space heaters during the non-he	tina		
			months and during long unoccupied p	riods.		
				1		
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MINI-AUDIT REPORT

FORM NO. MIN-01

BUILDING NAME Riverside Park Shelter	9	NAME OF ORGANIZATION City of Bloomington	DATE Oct. 2, 1980		
BUILDING ADDRESS 110 East 103rd Street		ADDRESS 2215 West Old Shakopee Road			
city Bloomington	zip code 55431	ситу Bloomington	zip code 55431		
PERSON COMPLETING FORM Randy Smith	telephone 935-6901	CONTACT PERSON Arthur Jensen	telephone 881-5811		
Instructions: For blocks 1 and 2 check the box describes the building type and then within th	which best fits the building e category check off the	g ownership conditions. For block 3 determ sub category befitting the building functio	ine which of the four categories n.		
1. OWNERSHIP TYPE XQPublic (PUB) Onon-Profit Association (NAP)	3a. SCHOOLS Elementary Secondary Coll. or Univ.	c. LOCAL (SCHL-ELM) □Offic (SCHL-SECD) □Stora . (SCHL-POST) ♀Servi	GOVERNMENT e (LOCG-OFFC) lge (LOCG-STRG) ice (LOCG-SERV)		
2. ULTIMATE OWNER County (CNTY) City (CITY) Townshin (TOWN)	UVocational Education Ag OAdministratio OTHER	(SCHL-VOCL) ⊔Libra gency (SCHL-ADMN) □Polic on (SCHL-ADMN) □Fire (SCHL-OTHR) □OTH	ry (LOCG-LBRY) e (LOCG-PLCE) (LOCG-FIRE) ER (LOCG-OTHR)		
□State (STAT) □Public School (PUSC) □Private School (PRSC) □Non-Profit Association (NPAP) □Indian Tribe (INDN)	b. PUBLIC CARE Nursing Hom Long Term C Rehab. Facil Public Health Res. Child C	d. HOSPIT Care (PBCR-NURS) □Gene Care (PBCR-TERM) □Tube ity (PBCR-RHAB) □OTH h Ctr. (PBCR-HCTR) are Ctr. (PBCR-RCCC) ·	FALS Frai (HOSP-GENL) Frculosis (HOSP-TUBR) ER (HOSP-OTHR)		
Instructions: With reference to page 23 entitled just Federal funding, then answer the question:	d Funding Information, de s correctly for the situation	etermine if the facilities are eligible for bo on. This section must be signed and dated i	th Federal and State funding or by the head of the organization		
Have you received a mini-audit grant before Have you previously applied for mini-audit funding? Do you wish to apply for mini-audit funding? Date	? ☐ Yes XX Yes ☐ No nding? XX Yes ☐ No ? ☐ Yes XX XNo 	eets if necessary.)	· · ·		
			ŝ		
Date					
Name		-			
Signature					
	BUILDING NAME Riverside Park Shelter BUILDING ADDRESS 110 East 103rd Street CITY Bloomington PERSON COMPLETING FORM Randy Smith Instructions: For blocks 1 and 2 check the box describes the building type and then within the 1. OWNERSHIP TYPE XIPublic (PUB) Non-Profit Association (NAP) 2. ULTIMATE OWNER County (CNTY) XICity (CITY) Township (TOWN) State (STAT) Public School (PUSC) Private School (PUSC) Non-Profit Association (NPAP) Indian Tribe (INDN) Instructions: With reference to page 23 entitled just Federal funding, then answer the question: Have you received a mini-audit funding Date Name Signature. Date D	BUILDING NAME Riverside Park Shelter BULDING ADDRESS 110 East 103rd Street Citry ZIP CODE Bloomington 55431 PERSON COMPLETING FORM TELEPHONE Randy Smith 935-6901 Instructions: For blocks 1 and 2 check the box which best file the buildin describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and then within the category check off the describes the building type and the describes and the desc	BuiltONG NAME Riverside Park Shelter NAME or one_ANL2ATION City of Bloomington Builtona Adoress 110 East 103rd Street 2000000000000000000000000000000000000		

Check the type of energy report which was completed and submitted prior to this mini-audit report.

□ Elementary School Energy Report (Form No. ED-00444-02) □ Secondary School Energy Report (Form No. ED-00445-02) XM Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this

(should, should not)

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the inform	nation referred to in section	F. I recommend that this building	should not	
	should not		(should, should not)	
undergo further solar conversion analysis, and/or	Shourd not		e renewable resources	waste
wind, wood. (Circle proper resources)	(should, should not)			

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith	
Mini-Auditor's Name (Print or Type)	a dan dan menangkan kenangkan di Kabupatén di Kabupatén di Kabupatén di Kabupatén di Kabupatén di Kabupatén di
Randy Sint	206
Signature	
Rieke Carroll Muller	Associates, Inc.
Firm Name (if none, enter none)	
P.O. Box 130	
Address	
612 935-6901	· •
Phone	
Sept. 30, 1980	
Date	

Building Organizational Authority (Print or Type)

Signature

Witnessed by:

Date

E

MINI-AUDIT STATEMENTS

F	NAME	POSITION	ORGANIZATION
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Associates
	Rienert Ege	Maintenance Foreman	City of Bloomington
		<u> </u>	
53			
NA NA			
	BRIEF DESCRIPTION OF GENEL	AL BUILDING CONDITION (i.e. type, and function)	
B	Good, Warming Hous	e	·····
z	MAJOR CHANGES PLANNED W	ITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation,	conversion from one building type to another)
NG	STRUCTURAL COMPONENTS C Wooden Rafters	F ROOF (i.e. metal beams, wooden rafters, concrete)	· · · · · · · · · · · · · · · · · · ·
FORM	ROOFING MATERIAL (i.e. tar an	d gravel, shingles, tile)	
BZ	Shingles		
	INSTRUCTIONS: Correctly answ Is there open land adjacent to the	er the following questions for the building being mini-a	
	XXX Yes No	s ouriering:	
	Solar collectors need to be located 3 p.m.? Roof: XXX Yes □ No South facing Wall: ∞Xyes □	l in an unshaded area. Is the roof of the building and the s No	outh facing wall unshaded between the hours of 9 a.m. and
	If the roof or wall are partly shad % of roof unshaded % of south facing wall unshade	ed, what percentage of the surface is unshaded? % ad%	
	What is the overall shape of the I	building? I-shaped DE-shaped Dother (specify)	
	Is the roof of the building flat or	pitched?	
	If pitched, what is the compass o	prientation of the ridgeline? North - Sou	ith
2	If pitched, what is the angle that	the roof makes with horizontal? <u>20</u>	
Ĵ.	Are there large obstructions on t	he roof such as chimneys, rooms for mechanical equip	oment, ventilating units, water towers, etc?
	What is the exterior facing mate	rial for the south facing wall? Face_Brick	
	What percentage of the south fa	cing wall is glass?%	
	ls the building's space heating e XX Yes □ No	quipment located within or on the building? (A no ans	wer indicates the equipment is in a separate building.)
	If the space heating equipment i XXI Ground Floor	s inside the building, where is it located? nt	
ENTIAL	Is the building's water heating e XX Yes □ No	quipment located within the building? (A no answer in	dicates the equipment is in a separate building)
R POTI	If the water heating equipment i	s inside the building, where is it located? nt D Other (specify)	
SOLA	Is the water heating system a ce XX Central D Multiple D (ntral system, does it consist of multiple units, or is it a Combination	combination of the central and multiple units?

instructions. Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section. BASE PERIOD YEAR . Fiscal Year ENERGY TYPE ENERGY USAGE CONVERSION FACTOR BTU USAGE Electricity Fuel 1 Fuel 2 TOTAL 20% SAVINGS YEAR Fiscal Year ___ ENERGY TYPE CONVERSION FACTOR ENERGY USAGE **BTU USAGE** Electricity Fuel 1 SAVINGS Fuel 2 PA 8 TOTAL Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report. 1 Check two boxes in each category -Range of Electrical Savings - XX0% XX5% □ 10% 0 15% 20% 25% other (specify) 0% XX5% XX10% Range of Fuel Savings ---0 15% 20% 25% O other (specify) 2 Calculate ranges of energy and cost savings -**Range of Electrical Savings** Annual Electrical Range of Energy Range of Electrical Annual Electrical % Range Consumption % Range **Dollars Spent** Dollars Savings Savings 0 11200 0 488.58 0 0 kwh lower bound to to to to 560 5 24.43 5 11200 488.58 kwh upper bound kwh 3 **Range of Fuel Savings** Annual Fuel Range of Fuel Annual Fuel Range of Fuel Consumption -% Range Savings % Range **Dollars Spent Dollars Savings** Savings 15.4x10 Btu, 30.8x10' ,817.75 5 5 40.89 lower bound SAVINGS ESTIMATION to to to to 30.8x16 **8**17.75 30.8x10 10 10 81.78 upper bound The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do

not fall between the roughly estimated ranges which are specified.

	CLASSIE			OPTIONAL:	OPTIONAL:	
ITEM NO.	MAJOR	O.	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
]	5	2	Routine Maintenance Schedule			

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Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

				OPTIONAL:	OPTIONAL	
ITEM		ICATION O.	NEW MINI-AUDIT OPPORTUNITIES		ENERGY COST	DATE OF IMPLEMENTATION
	CLASS	CLASS		3411103	SAVINGS	
		1	Keep all controls free of dust.			
2	2	1	Add insulation between rafters			
3	2	8	Caulk all cracks that allow air and moisture into the building			·
4	2	10	Replace single glazed windows with double glazed thermopanes.			
5	2	11	Replace some windows with insulation wall panels			
6	3	1	Check the calibration of all control and devices for proper settings and operations.	lers		
					ļ	
/	3		65°F maximum occupied, 60°F maximum			
	1		heat after the ice skating season.			
8	3	2	Clean and remove obstructions from		<u> </u>	
			(diffusers, registers and grillers).		<u></u>	
	1		of all dirt and foreign materials.			
9	3	3	Inspect fans for normal operation			
10	3	3	Inspect ductwork for air leakage. Seal all leaks by taning or			
		1	caulking.			
11	3	3	Inspect insulation of hot and chille water pipes. Repair or replace as no	beesan	1	
12	3	3	Clean or replace filters periodical	ly.	1	
13	4	1	Instruct occupants and maintenance to switch off all lights when they	personn	e1	
			are not needed.			
14	4	3	Clean fixtures and lamps regularly.			
15	4	3	Replace lamps in groups before they	1		
		1	light output per fixture.			
16	4	4	Use lower wattage lamps to provide necessary illumination	the	1	
17	4	4	Allow part of a lighting system to be turned off, while maintaining the		1	
	1		necessary light.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW DPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit performance of the mini-audit be completed by the mini-audit team during the building walk-through.

				OPTIONAL:	OPTIONAL:	
ITEM		ICATION D. SUB	NEW MINI-AUDIT OPPORTUNITIES		ENERGY COST	DATE OF IMPLEMENTATION
	CLASS	CLASS			SAVINGS	
18	5	ן זן	Keep records of the operating schedy	le,	1	
		┝────┤	montnly energy consumption and purch	ase	L	
l			on any new equipment that attects er	ergy	1	
		┝────┤	ing These percents will indicate up	<u> u </u>		
			impact of enorgy concerns the		1 i	
10	L L	┝──╦╾┦	Review the pocond books on a manual	100	├ ────	anna an
13			basis.			
20	6		Adjust water supply to 100 ⁰ F.			
21	6	2	All electric heating equipment should be checked for	d .		
		┞	be checked for corroded elements and	+	<u> </u>	
			rouse connections and repaired as required.			
22	6	2	Periodically drain and remove the		ſ	
			sediment.			
23	6	2	Shut down heating equipment when the	\$		
ļ		├ ──── ↓	hot water is not required.	ļ	 	
24	7	3	Clean air-sides, remove soot, and			
	+	<u> </u>	scrape scale in forced warm air fur	naces.		
1 25	/	3	it the firing rate of gas burners is	3		
		┟────┤	LOO HIGH, IT CAUSES Short cycling al	<u>ua</u>		
		[]	rate requires constant enabling an	a		
	1		delivers inadequate heat to the space	es.		
26	7	4	Turn off gas pilots for furnaces by) ilers		
-		ļ	and space heaters during the non-	<u></u>		
			heating months and during long unoccupied periods.			
[T	
6						

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW PPORTUNITIES

MINI-AUDIT REPORT

FORM NO. MIN-01

A	Building NAME Running Park Shelter		NAME OF ORGANIZATION City of Bloomington Oct. 2, 1980			
	BUILDING ADDRESS 9503 12th Avenue Shelter		ADDRESS 2215 West Old Shakope	e Road		
TACT	city Bloomington	ZIP CODE 55431	^{cı} Ăloomington	²¹ 25431		
CONT	PERSON COMPLETING FORM Randy Smith	TELEPHONE 935-6901	CONTACT PERSON Arthur Jensen	telephone 881–5811		
R	Instructions: For blocks 1 and 2 check the box	which hest fits the huildin	a ownership conditions. For block 3 datas	mine which of the four categories		
	describes the building type and then within th	ne category check off the	sub category befitting the building function	on.		
	1. OWNERSHIP TYPE 図Rublic (PUB) ONon-Profit Association (NAP)	3a. SCHOOLS Elementary Secondary Coll. or Univ	c. LOCA (SCHL-ELM) Doffi (SCHL-SECD) Distor (SCHL-POST) Distor	L GOVERNMENT ce (LOCG-OFFC) rage (LOCG-STRG) vice (LOCG-SERV) rage (LOCG-LBRY)		
CODE	2. ULTIMATE OWNER □County (CNTY) XQCity (CITY) □Township (TOWN)		gency (SCHL-ADMN) DPoli on (SCHL-ADMN) DFire (SCHL-ADMN) DFire (SCHL-OTHR) DOTH	ce (LOCG-PLCE) (LOCG-FIRE) HER (LOCG-OTHR)		
	UState (STAT) □Public School (PUSC) □Private School (PRSC) □Non-Profit Association (NPAP) □Indian Tribe (INDN)	b. PUBLIC CARE UNursing Horn Long Term C Rehab. Facili Public Health Res. Child C	d. HOSP de (PBCR-NURS) □Ger are (PBCR-TERM) □Tub ity (PBCR-RHAB) □OTh are Ctr. (PBCR-HCTR) are Ctr. (PBCR-RCCC)	ITALS Ieral (HOSP-GENL) Ierculosis (HOSP-TUBR) IER (HOSP-OTHR)		
C	Instructions: With reference to page 23 entitle just Federal funding, then answer the question	d Funding Information, de is correctly for the situatio	etermine if the facilities are eligible for bo n. This section must be signed and dated	oth Federal and State funding or by the head of the organization		
	Have you received a mini-audit grant before Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date	? ☐ Yes ĎXNo unding? X0 Yes ☐ No ? ☐ Yes X2 No unding? ☐ Yes ☐ No unding? ☐ Yes ☐ No g? ☐ Yes ☐ No from: (Use additional she	ets if necessary.)			
MINI-AUDIT FUNDING REQUEST	Date Name Signature					

Check the type of energy report which was completed and submitted prior to this mini-audit report.

п Elementary School Energy Report (Form No. ED-00444-02) Secondary School Energy Report (Form No. ED-00445-02) XXXExisting Building Energy Report (Form No. EN-00041-01)

D

ENERGY REPORT CHECK-OFF

E

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

did not Based on actual records, the energy conservation operating and maintenance procedures listed in section K. save at least (did, did not) 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems. I recommend that this ______SIOUIG_NOT______ be the subject of a maxi-audit. _ be the subject of a maxi-audit. (should, should not)

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the inform	ation referred to in section I	El recommend that this building	should not	
	chould not	, recommend that the building	(should, should not)	
undergo further solar conversion analysis, and/or	snouta not	undergo further analysis of the	renewable resources wast	le
wind, wood. (Circle proper resources)	(should, should not)			

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith Mini-A (Print or Type) 206 Signature <u>Rieke Carroll Muller Associates</u> Inc. P.O. Box 130 Address 6<u>12 935-6901</u> Phone <u>Sept. 30. 1980</u> Date

Witnessed by:

Building Organizational Authority (Print or Type)

Signature

Date

F	NAME	POSITION	ORGANIZATION
	Dandy Smith	Contified Mini Auditor	Dioke Carrall Mullon Accession
	Ranuy Sint UI	Certified Mini-Auditor	KTERE CATTOIL MULLER ASSOCIATES
	Rienert Ege	Maintenance Foreman	City of Bloomington
	· ·	(
AUDIT			
i			
G	BRIEF DESCRIPTION OF GEN Good, Warming Ho	IERAL BUILDING CONDITION (i.e. type, and function	n)
z	MAJOR CHANGES PLANNED	WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation	on, conversion from one building type to another)
MATIO	STRUCTURAL COMPONENTS Wooden Beams	OF ROOF (i.e. metal beams, wooden rafters, concret	ie)
UILD	ROOFING MATERIAL (i.e. tar a	and gravel, shingles, tile)	
ēΖ	Iar and Gravel		
H	INSTRUCTIONS: Correctly and	wer the following questions for the building being mi	ini-audited.
	Is there open land adjacent to t	the building?	
	Solar collectors need to be locat 3 p.m.? Roof: XXves INO South facing Wall: XVves	led in an unshaded area. Is the roof of the building and th	he south facing wall unshaded between the hours of 9 a.m. and
	If the roof or wall are partly sh. % of roof unshaded % of south facing wall unsha	aded, what percentage of the surface is unshaded? 	
	What is the overall shape of the square XX rectangle	e building? I H-shaped □ E-shaped □ other (specify)	
	Is the roof of the building flat on ♀ flat □ pitched	or pitched?	
	If pitched, what is the compass	orientation of the ridgeline?	
	If pitched, what is the angle th	at the roof makes with horizontal?	
	Are there large obstructions or Yes XXI No	n the roof such as chimneys, rooms for mechanical ec	quipment, ventilating units, water towers, etc?
	What is the exterior facing mail	terial for the south facing wall?	Face Brick
	What percentage of the south	facing wall is glass? <u>10</u> %	
	ls the building's space heating Ø Yes □ No	equipment located within or on the building? (A no a	answer indicates the equipment is in a separate building.)
	If the space heating equipmen W Ground Floor D Basen	it is inside the building, where is it located? nent □ Roof □ Other (specify)	
NTIAL	Is the building's water heating ₩ Yes □ No	equipment located within the building? (A no answer	r indicates the equipment is in a separate building)
MATIO	If the water heating equipmen	t is inside the building, where is it located? nent	
SOLAF	ls the water heating system a ♀ Central □ Multiple □	central system, does it consist of multiple units, or is Combination	it a combination of the central and multiple units?

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

	BASE PER	IOD YEAR	Fiscal Year
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity		1	
Fuel 1			
Fuel 2		<i>t</i> '	
TOTAL			

		20% SAVI	NGS YEAR	Fiscal Year
4	ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
	Electricity			
S	Fuel 1			
SAVING	Fuel 2		i	
20% DATA	TOTAL			

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1	Check two boxes in each categ	ory —						
	Range of Electrical Savings —	XX 0%	XX 5%	0 10%	□ 15%	20%	□ 25%	other (specify)
	Range of Fuel Savings	0%	XX 5%	XX 10%	□ 15%	20%	25%	other (specify)

2 Calculate ranges of energy and cost savings -

Constant of the

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J

	Range of Electrical Savings
	Annual Electrical Range of Energy Annual Electrical Range of Electrical % Range Consumption Savings % Range Dollars Spent Dollars Savings
	lower bound% x4478 kwh = kwh,% x \$615.66 \$
	to to to to to $\frac{5}{8}$ x $\frac{14478}{14478}$ kwh = $\frac{723.9}{8}$ kwh, $\frac{5}{8}$ x $\frac{615.66}{15.66}$ = $\frac{30.78}{10}$
3	Range of Fuel Savings
	Annual Fuel Range of Fuel Annual Fuel Range of Fuel Annual Fuel Range of Fuel Savings Savings 6 % Range Dollars Spent Dollars Savings 12.3x10 Btu, 5 % x \$ 665.92 \$ 33.30
NGS	upper bound 10^{to} x $24.7 \times 10^{7}_{\text{Btu}} = 12.3 \times 10^{6}_{\text{Btu}} \frac{10^{\text{to}}}{10^{\text{stu}}} \times \frac{665.92}{66.59} = \frac{10^{10}}{66.59}$
SAVI	The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

not fall between the roughly estimated ranges which are specified.

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.

				OPTIONAL:	OPTIONAL:	
ITEM NO.	CLASSIN N MAJOR CLASS	ICATION O. SUB CLASS	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	5	2	Routine Maintenance Schedule			
	1					
	<u> </u>					
			nanda ana a ang ng pang			
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	1	+				
			nya ara- 1999		<u> </u>	
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	-	+			-	
		+				

Note Reproduce this page as necessary

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Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

				OPTIONAL:	OPTIONAL	
		ICATION O.	NEW MINI-AUDIT OPPORTUNITIES		ENERGY COST	DATE OF IMPLEMENTATION
	CLASS	CLASS			SAVINGS	
1	1	1	Keep all controls free of dust.			
2	2	1	Add insulation between rafters			
3	2	2	Weatherstrip all exterior doors			
4	2	8	Caulk all cracks that allow air and moisture into the building.			
5	2	10	Replace single glazed windows with double glazed thermopanes.			
6	2		Replace some windows with insulation wall panels.			
/	3		Check the calibration of all control and devices for proper settings and	lers		
			operations.			
8	3	1	65° F maximum occupied, 60° F			
			heat off after the ice skating			
9	3	2	Clean and remove obstructions from			
	1	<u> </u>	(diffusers, registers and grillers).			
	1		of all dirt and foreign materials.		<u> </u>	
10	3	3	Inspect fans for normal operation.		†	
11	3	3	Inspect ductwork for air leakage.			
12	3	3	Clean or replace filters periodicall	y.	<u> </u>	
13	4	1	Instruct occupants and maintenance			
		1	when they are not needed.			
14	4	3	Clean fixtures and lamps regularly.			
15	4	3	Replace lamps in groups before they			
			light output per fixture.			
16	4	4	Use lower wattage lamps to provide t	he		
17	4	4	Allow part of a lighting system to be turned off, while maintaining the			
Г			necessary light.			
18	5	1	Keep records of the operating schedu monthly energy consumption and purch	ule, nase		

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW DPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number form the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

		-		OPTIONAL:	OPTIONAL:	
ITEM	CLASSIF			ENERGY	ENERGY	
NO.	MAJOR CLASS	SUB CLASS		SAVINGS	COST SAVINGS	DATE OF IMPLEMENTATION
			of any new equipment that affects en consumption of efficiency of the built	ergy ld-		
			ing. These records will indicate th	e es		
19	5	1	Review the record books on a regular basis			
20	6	1	Adjust water supply to 100°F.			
21	6	2	All electric heating equipment shoul	d		
			loose connections and repaired as			
22	6	2	Shut down heating equipment when the			
23	7	3	Clean air-sides, remove soot, and	aces		
24	7	3	If the firing rate of gas burners is to high it causes short evolved			
			excessive fuel consumption. Too low			
			and delivers inadequate heat to the			
25	7	4	Turn off gas pilots for furnaces, be	ilers,		
			heating months and during long unoccupied periods.			
				1		
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Note 2: Reproduce this page as necessary.

NEW I

MINI-AUDIT REPORT

FORM NO. MIN-01

				NAME OF ORGANIZATIO	ON N	DATE
A	Smith Park Shelter			City of Bloo	mington	10/6/80
ŀ	BUILDING ADDRESS	en anna " ha sala — a h-fraidh ach a ch		ADDRESS		
	8155 Park Ayenue South			2215 West 01	d Shakopee I	Road
F	CITY	ZIP COL	DE	CITY		ZIP CODE
	Bloomington, MN	55	431	Bloomington,	MN	55431
₹[PERSON COMPLETING FORM	TELEPH	IONE	CONTACT PERSON		TELEPHONE
8	Randy Smith	93	5-6901	Arthur Jense	en	881-5811
						-
3	Instructions: For blocks 1 and 2 check the box describes the building type and then within th	x which bes he category	at fits the buildin y check off the	g ownership conditions. For sub category befitting the t	r block 3 determine wh building function.	hich of the four categorie:
	1. OWNERSHIP TYPE XIOPublic (PUB) ONon-Profit Association (NAP)	За.	SCHOOLS Elementary Secondary Coll. or Univ	(SCHL-ELM) (SCHL-SECD) (SCHL-POST)	c. LOCAL GOVI Office Storage XX Service	ERNMENT (LOCG-OFF (LOCG-STF (LOCG-SEF
30	2. ULTIMATE OWNER □County (CNTY) X⊠City (CITY)	-	Vocational Education A Administratio	(SCHL-VOCL) gency (SCHL-ADMN) on (SCHL-ADMN) (SCHL-OTHR)	□Library □Police □Fire □OTHER	(LOCG-LBF (LOCG-PLC (LOCG-FIRI (LOCG-OTH
	□Township (TOWN) □State (STAT) □Public School (PUSC)	b.	PUBLIC CARE	ne (PBCR-NURS)	d. HOSPITALS	(HOSP-GE
ELIGIBIL	□Private School (PRSC) □Non-Profit Association (NPAP) □Indian Tribe (INDN)		Rehab. Facil Public Healt Res. Child C	ity (PBCR-RHAB) h Ctr. (PBCR-HCTR) are Ctr. (PBCR-RCCC)		sis (HOSP-TUE (HOSP-OTF
i TT						
	Instructions: With reference to page 23 entitle	ed Funding	information d	stermine if the facilities are	elizible for both Fed	Jeral and State lunding (
	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit	ns correctly	s XXNo	on. This section must be sig	ned and dated by the	head of the organizatio
	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date	ns correcti e? Yes funding? g? Yes	y for the situations s. XXNo bX res □ No s ⊡ No	-	ined and dated by the	e head of the organization
	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date	ns correcti e?	y for the situations s. XXNo bX ces □ No s □ No	-	ned and dated by the	e head of the organization
	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date	ns correcti e? Yes funding? g? Yes	s XCKNo s XCKNo s XCKNo s XCNo s XCNo	- -	ned and dated by the	e head of the organization
	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date Name: Signature: If eligible for Federal funding only: Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding	ns correcti i: fe? ye: funding? g? Ye: funding? ng? Ye: funding? Ye: funding?	s No Y for the situation S XNo S Y for the situation S Y for the situation S Y for the situation No S Y for the situation No S Y for the situation No S Y for the situation S Y for the situation	on. This section must be sig	ned and dated by the	e head of the organization
	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date Name: Signature If eligible for Federal funding only: Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding The 50% match for Federal funds will come	ns correcti : funding? g? Yes Yes funding? ng? Yes funding? ng? Yes	s No Y for the situation S XNo S Y for the situation S Y for the situation No S Y for the situat	eets if necessary.)	ned and dated by the	e head of the organization
	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date	ns correcti : funding? g? Yes Yes funding? ng? Yes funding? ng? Yes	s No Y for the situation S XNo S Y for the situation S Y for the situation No S Y for the situat	eets if necessary.)	ned and dated by the	e head of the organization
	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date Name: Signature. If eligible for Federal funding only: Have you previously applied for mini-audit funding Date Signature. If eligible for Federal funding only: Have you previously applied for mini-audit funding Do you wish to apply for mini-audit funding The 50% match for Federal funds will come	ns correcti e? Yes funding? g? Yes re? Yes funding? ng? Yes funding? e from: (Us	s ONO S	eets if necessary.)	ned and dated by the	e head of the organization
	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date Name: Signature. If eligible for Federal funding only: Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date Signature. Do you wish to apply for mini-audit funding The so% match for Federal funding only: The 50% match for Federal funds will come	ns correcti e? Yes funding? g? Yes re? Yes funding? ng? Yes funding? ng? Yes	s No Yes No Yes No Yes No Se additional sho	eets if necessary.)	ned and dated by the	e head of the organization
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	iust Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date	ns correcti : funding? g? Yes funding? ng? Ye funding? Ye e from: (Us	s No Yes No S No Yes No S No S No S No S No S A S No S A S No S A S No S A S A S A S A S A S A S A S A	eets if necessary.)	ned and dated by the	e head of the organization
	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date	ns correcti : funding? g? Yes funding? ng? Ye funding? ng? Ye	s No Yes No s Yes No s No Yes No s Additional sho	eets if necessary.)	ned and dated by the	e head of the organization
	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date Name: Signature: If eligible for Federal funding only: Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding The 50% match for Federal funds will come Date	ns correcti e? Yes funding? g? Yes re? Yes funding? ng? Yes e from: (Us	s No Yes No S S No S S No S S S No S S S No S S S S S S S S S S S S S S S S S S S	<pre>education must be sig on. This section must be sig o eets if necessary.)</pre>	ned and dated by the	e head of the organization
NG REQUEST.	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date	ns correcti e? Yes funding? g? Yes re? Yes funding? ng? Yes e from: (Us	s No Yes No S No Yes No S No S No S No S No S No S No S A S No S S No S S No S S S No S S S No S S S S S S S S S S S S S S S S S S S	eets if necessary.)	ned and dated by the	e head of the organization
NDING REQUEST.	just Federal funding, then answer the question If eligible for both Federal and State Funding Have you received a mini-audit grant befor Have you previously applied for mini-audit Do you wish to apply for mini-audit funding Date Name: Signature. If eligible for Federal funding only: Have you previously applied for mini-audit funding Date Name: Signature. If eligible for Federal funding only: Have you previously applied for mini-audit funding Do you wish to apply for mini-audit funding The 50% match for Federal funds will come Date Name. Name. Signature	ns correcti e? Yes funding? g? Yes re? Yes funding? ng? Yes e from: (Us	s No S No S No S No S No S No S No S S No S S No S S S No S S S No S S S S No S S S S S S S S S S S S S S S S S S S	eets if necessary.)	ned and dated by the	e head of the organization

Check the type of energy report which was completed and submitted prior to this mini-audit report.

ENERGY REPORT

E

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K	did not	_save at least
20% of the building's energy consumption as specified in section I.	(did, did nót)	

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, 1 recommend that this should should not

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based when the intermediate in a sting C and the information referred to in particip E. I recommond that this building	Should hoc
based upon the information in section E and the information referred to in section F, i recommend that this building	(abouid abouid pol)
	(should, should not)

undergo further solar conversion analysis, and/or_____Should not_____ undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources) (should, should not)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith	
Mini-Auditor's Name (Print or Type)	
Kardy SND.	206
Signature	
Rieke Carroll Muller Assoc.,	Inc.
Firm Name (if none, enter none)	

P.O. Box 130

<u>(612) 935-6901</u>

<u>September 30, 1980</u>

Address

Date

Witnessed by:

Building Organizational Authority (Print or Type)

should not

Signature

Date

MINI-AUDIT STATEMENTS

F	NAME	POSITION	ORGANIZATION
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc
	Reinert Ege	Maintenance Foreman	City of Bloomington
		1	
LUDIT			
G	Good, Warming Ho	ENERAL BUILDING CONDITION (i.e. type, and function DUSE	n)
NO	None	D WITHIN NEXT 15 YEARS (I.e. demolition, renabilitation	on, conversion from one building type to another)
DING	Wooden Rafters	rand gravel shinales tile)	•
INFOL INFOL	Tar & Gravel	n and graver, sningles, tile)	
H	INSTRUCTIONS: Correctly a	answer the following questions for the building being m	ini-audited.
	Is there open land adjacent t	to the building?	· · ·
	Solar collectors need to be loo 3 p.m.? Roof:XXC Yes □ No South facing Wall: XXYe:	cated in an unshaded area. Is the roof of the building and t s	he south facing wall unshaded between the hours of 9 a.m. and
	If the roof or wall are partly % of roof unshaded % of south facing wall uns	shaded, what percentage of the surface is unshaded? % haded%	
	What is the overall shape of square XOI rectangle	the building? □ H-shaped □ E-shaped □ other (specify)	
	Is the roof of the building fla XØ flat □ pitched	it or pitched?	
	If pitched, what is the compa	ass orientation of the ridgeline?	
	If pitched, what is the angle	that the roof makes with herizontal?	
	Are there large obstructions	on the roof such as chimneys, reoms for mechanical e	quipment, ventilating units, water towers, etc?
	What is the exterior facing n	naterial for the south facing wall? Face Br	ick
	What percentage of the soul	th facing wall is glass?%	
	ls the building's space heati XØ Yes □ No	ng equipment located within or on the building? (A no :	answer indicates the equipment is in a separate building)
	If the space heating equipm XA Ground Floor	ent is inside the building, where is it located? ement	
ENTIAL	Is the building's water heati XV Yes □ No	ng equipment located within the building? (A no answe	r indicates the equipment is in a separate building)
RMATH	If the water heating equipm X 2 Ground Floor Bas	ent is inside the building, where is it located? ement □ Other (specify)	
SOLA	Is the water heating system XX Central DMultiple	a central system, does it consist of multiple units, or is Combination	it a combination of the central and multiple units?

Instructions. Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

		BASE PE	RIOD YEAR		Fiscal Yea	Г _{андерететтетт} анд <u>а со </u>
ENERGY TYPE	ENERGY	USAGE	CONVERSION F	ACTOR		BTU USAGE
Electricity		ο, δ. του μ ^α σταστοριατικό βατατικός δαθικός δ ήθημας	······································	an a		
Fuel 1		en e la contra la contra contra contra contra de la contra		etrant (de cos) de la companya et con est de la la const		
 Fuel 2		anna ann a Tùr - Tann Fairte à An-Alaithean an Alaithe		<u>adam ama</u> tri ang ani mini si 1998		an a
 TOTAL		unte differenti () 				ange annang pile disertition da an spin in denomphis form
 		2044 SAVI			Eiscal Va	ar
	ENERGY		CONVERSION	ACTOR		BTU USAGE
			CONVENSION			
 Electricity						
 Fuel 1					ļ	
 Fuel 2						
 TOTAL Instructions: This section is to be state the roughly estimated range of the new mini-audit opportuni	completed by the mini of the percent of total d lites listed in section l	-auditor after th electrical and fu	e walk-thru pertion of the r el consumption which wou	nini-audit. Firs IId be saved res	t, check the ap sulting from th	propriate boxes which e implementation of a
 TOTAL Instructions: This section is to be state the roughly estimated range of the new mini-audit opportuni percentages by the annual electric Check two boxes in each catego	completed by the mini of the percent of total of ities listed in section L rical and fuel consump irry —	i-auditor after th electrical and fu Secondly, ca ption data on th	e walk-thru pertion of the n el consumption which wou loulate the range of energy le energy report.	nini-audit. Firs IId be saved rea gy and cost si	t, check the ap sulting from th avings by mul	propriate boxes whic e implementation of a tiplying the estimate
 TOTAL Instructions: This section is to be state the roughly estimated range of the new mini-audit opportuni percentages by the annual electi Check two boxes in each catego Range of Electrical Savings —	completed by the mini a of the percent of total ities listed in section L rical and fuel consump ory — XX 0% XX 5%	-auditor after th electrical and fu Secondly, ca ption data on th 10%	e walk-thru pertion of the reliconsumption which wou iculate the range of energy e energy report.	nini-audit. Firs IId be saved rea gy and cost sa 25%	t, check the ap sulting from th avings by mul	ppropriate boxes whic e implementation of a tiplying the estimate pecify)
TOTAL Instructions: This section is to be state the roughly estimated range of the new mini-audit opportuni percentages by the annual election Check two boxes in each catego Range of Electrical Savings	Completed by the mini of the percent of total ities listed in section L rical and fuel consump ory — XIX 0% XIX 5% 0% XIX 5%	-auditor after th electrical and fu Secondly, ca ption data on th 10% XX 10%	e walk-thru pertion of the n el consumption which wou iculate the range of energy re energy report.	nini-audit. Firs IId be saved res gy and cost sa 25% 25%	t, check the ap sulting from th avings by mul	propriate boxes whic e implementation of a tiplying the estimate specify)
TOTAL Instructions: This section is to be state the roughly estimated range of the new mini-audit opportuni percentages by the annual elect Check two boxes in each catego Range of Electrical Savings — Range of Fuel Savings — Calculate ranges of energy and the	completed by the mini of the percent of total ities listed in section L rical and fuel consump ory	-auditor after th electrical and fu Secondly, ca ption data on th 10% XIX 10%	e walk-thru pertion of the n el consumption which wou lculate the range of energy re energy report.	nini-audit. Firs IId be saved res gy and cost sa 25% 25%	t, check the ap sulting from th avings by mul	propriate boxes whic e implementation of a tiplying the estimate specify)
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TOTAL Instructions: This section is to be state the roughly estimated range of the new mini-audit opportuni percentages by the annual electi Check two boxes in each catego Range of Electrical Savings — 2 Range of Electrical Savings — Calculate ranges of energy and a % Range	iccompleted by the mining of the percent of total of the percent of total of titles listed in section to trical and fuel consumptory	-auditor after th electrical and fu Secondly, ca ption data on th 	e walk-thru pertion of the reliconsumption which wou iculate the range of energy e energy report.	nini-audit. Firs IId be saved rea gy and cost sa 25% 25% Annual El Dollars	t, check the ap sulting from th avings by mul conter (s conter (s conter (s conter) conter (s	propriate boxes whic e implementation of a tiplying the estimate pecify)
TOTAL Instructions: This section is to be state the roughly estimated range of the new mini-audit opportuni percentages by the annual electric Check two boxes in each catego Range of Electrical Savings	completed by the mini a of the percent of total ities listed in section t rical and fuel consump ory	-auditor after th electrical and fu Secondly, ca ption data on th 2 10% XX 10% Range of E Range of E Savii = 0	e walk-thru pertion of the n el consumption which wou loulate the range of energy e energy report. 15% 20% 15% 20% lectrical Savings Energy ngs % Range kwh, % x	nini-audit. Firs Id be saved rea gy and cost sa 25% 25% Annual El Dollars \$783.	t, check the ap sulting from th avings by mul conter (s conter (s ectrical spent .84	propriate boxes whic e implementation of a tiplying the estimate pecify) pecify) Range of Electrica Dollars Savings \$0
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Instructions: This section is to be state the roughly estimated range of the new mini-audit opportuni percentages by the annual elect Check two boxes in each catego Range of Electrical Savings	completed by the minis of the percent of total i ities listed in section L rical and fuel consump ory XX 0% XX 5% □ 0% XX 5% □ 0% XX 5% cost savings Annual Electrical Consumption <u>8534</u> kwh <u>8534</u> kwh	-auditor after th electrical and fu- Secondly, ca ption data on th 2 10% XX 10% Range of E Range of E Range of Savin = 0 to 426.7	e walk-thru pertion of the n el consumption which wou loulate the range of energy e energy report. 15% 20% 15% 20% lectrical Savings Energy ngs % Range kwh,% x	Annual El Dollars : \$783.	t, check the ap sulting from th avings by mul conter (s conter (s ectrical Spent .84	Propriate boxes which e implementation of a tiplying the estimate specify)
Instructions: This section is to be state the roughly estimated range of the new mini-audit opportuni percentages by the annual electric Check two boxes in each catego Range of Electrical Savings	completed by the minis of the percent of total i ities listed in section L rical and fuel consump ory XIX 0% XIX 5% □ 0% XIX 5% cost savings Annual Electrical Consumption 	-auditor after th electrical and fu- Secondly, ca ption data on th 10% XX 10% Range of E Range of E 	e walk-thru pertion of the r el consumption which wou iculate the range of energy e energy report. 15% 20% 15% 20% lectrical Savings Energy ngs % Range kwh,% x bto kwh,%	Annual El Dollars 3 5 783 . 5 783 .	t, check the ap sulting from th avings by mul conter (s conter (s ectrical Spent .84 .84	Propriate boxes which e implementation of a tiplying the estimate specify)
Instructions: This section is to be state the roughly estimated range of the new mini-audit opportuni percentages by the annual electric Check two boxes in each catego Range of Electrical Savings	completed by the minis of the percent of total of ities listed in section to rical and fuel consumptory	-auditor after the electrical and fu Secondly, caption data on the Dion data on the XX 10% Range of E Range of Savin = 0 to 426.7 Range of Range of Range of	e walk-thru pertion of the r el consumption which wou lculate the range of energy report. 15% 20% 15% 20% lectrical Savings Energy ngs % Range kwh,% x to to 5% x 5%	Annual El Dollars \$ 783. Annual	t, check the ap sulting from th avings by mul other (s other (s ectrical spent .84 .84	Propriate boxes which e implementation of a tiplying the estimate specify)
 TOTAL Instructions: This section is to be state the roughly estimated range of the new mini-audit opportuni percentages by the annual electric Check two boxes in each catego Range of Electrical Savings	completed by the mining of the percent of totals ities listed in section L rical and fuel consump ory	-auditor after th electrical and fu- Secondly, ca ption data on th 10% XX 10% Range of E Range of E Range of Savi = 0 to Range of Range of Range of Range of Range of Range of Range of Range of Savi	e walk-thru pertion of the n el consumption which wou loculate the range of energy e energy report. 15% 20% 15% 20% lectrical Savings Energy ngs % Range kwh,% x b to 	Annual El Dollars s <u>783</u>	t, check the ap sulting from the avings by multing from the avings by multing other (s contert (s contert) contert contert (s contert) contert) contert (s contert) contert) contert contert) contert (s contert) contert) contert) contert) contert) contert) contert) contert) contert	Propriate boxes whic e implementation of a tiplying the estimate specify)
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Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. This section of the mini-sudit report should be completed by building personnel prior to the walk-through by the mini-auditor.

			OPTIONAL: OPTIONAL:				
ITEM	CLASSIF	ICATION	PAST ENERGY CONSERVATION ACTIONS	ENERGY	ENERGY	DATE OF IMPLEMENTATION	
NU.	CLASS	SUB CLASS		SAVINGS	SAVINGS		
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Note Reproduce this page as necessary

Κ

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through. OPTIONAL: OPTIONAL:						
ITEM NO.	CLASSIF NO MAJOR CLASS	ICATION D. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Kepp all controls free of dust.			
2	2	1	Add insulation between rafters.			
3	2	8	Caulk all cracks that allow air and moisture into the building.			
4	2	10	Replace single glazed windows with double glazed thermopanes.			
5	2	11	Replace high windows with insulation wall panels.	on		
6	3	1	Check the calibration of all con- trollers and devices for proper settings and operations.			
7	3	1	65 ⁰ F maximum occupied, 60 ⁰ F maximum unoccupied. Consider turning off heat after ice skating season.			
8	3	2	<u>Clean and remove obstructions</u> from all room air outlets and <u>inlets (diffusers, registers and</u> grillers). They should be <u>kept clean and free of all dirt</u> and foreign materials.			
9	3	3	Inspect fans for normal operation.			
10	3	3	Inspect ductwork for air leakage. Seal all leaks by taping or caulking.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

NEW CPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

				OPTIONAL: OPTIONAL:		
ITEM NO.	CLASSIF NO MAJOR CLASS	ICATION O. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
11	3	3	Clean or replace filters priodic- ally.		fer fra de la contra br>Non de la contra de l	
12	4	1	Instruct occupants and maintenance personnel to switch off all lights when they are not needed.			
13	4	3	Clean fixtures and lamps regularly.			
14	4	3	Replace lamps in groups before they burn out to maintain higher average light output per fixture.			
15	4	4	Use lower wattage lamps to provide the necessary illumination.			
16	4	4	Allow part of a lighting system to be turned off, while maintaining the necessary light.			
17	5	1	Keep records of the operating			
			tion and purchase of any new equip- ment that affects energy consump- tion of efficiency of the building. These records will indicate the			
			measures.			
18	5	1	Review the record books on a regular basis.			
19	6	1	Adjust water supply to 100 ⁰ F.			
	-					

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

NEW COPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

				OPTIONAL: OPTIONAL:		
	CLASSIF	CATION			ENERGY	
ITEM	N	NO. NEW MINI-AUDIT OPPORTUNITIES		ENERGY	COST	DATE OF IMPLEMENTATION
NO.		MAJOR SUB CLASS CLASS		SAVINGS	SAVINGS	
	ULA33	ULASS			angaga pelantakan pelantakan kerintakan di ber	
20	6	2	The hurner system of fossil_fuol			
L			The burner system of tossif-idel			and a second
			water neaters should be kept			
L	L		clean and in good operating		<u> </u>	
			condition.	1		
	1000 Contractor Contractor Contractor				and the second	
21	6	2	Periodically drain and remove			
	<u> </u>		the sediment			
			the Seament.			
				and the second		
00						
22	6	2	Shut down neating equipment when			
			the hot water is not required.			
				L	L	
23	7	3	Clean air-sides, remove soot, and			•
	<u> </u>		scrape scale in forced warm air			
			fumpped	1		
	<u> </u>		Turnaces.			
The second second second	ļ					
24	7	3	If the firing rate of gas or oil			
1	1		burners is too high, it causes	I		
			short cycling and excessive fuel			
			consumption Too low a rate re-	+		
			cuiros constant openating and			
	<u> </u>		delivere instant operating and			
			delivers inadequate neat to the			
	<u> </u>		spaces.	anda manananan dan kananan kananan		
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0-	_					
25	7	4	lurn off gas pilots for furnaces,			
	1	T	boilers, and space heaters during	1	1	a an ann an tha ann an tha ann an tha tha tha tha tha ann an tha tha ann an tha an tha ann an tha ann an tha an
			the non-heating months and during			
	1	+	long unoccupied periods.		+	
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Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

MINI-AUDIT REPORT

FORM NO. MIN-01

	BUILDING NAME		NAME OF OPCANIZATION	DATE
A	South Glen Park Shelter		City of Bloomingt	on 0ct. 2, 1980
	BUILDING ADDRESS		ADDRESS	konee Road
	IU/UI RICH Avenue South		ZZIS WEST UTU SHA	
ACT	Bloominaton	55431	Bloomington	55431
ATA	PERSON COMPLETING FORM	TELEPHONE	CONTACT PERSON	TELEPHONE
ŬĎ	Randy Smith	935-6901	Arthur Jensen	881-3811
B	Instructions: For blocks 1 and 2 check the box describes the building type and then within th	which best fits the building e category check off the s	gownership conditions. For block 3 de sub category befitting the building fu	stermins which of the four categories nction.
	1 OWNERSHIP TYPE)XPublic (PUB) DNon-Profit Association (NAP)	3a. SCHOOLS □Elementary □Secondary □Coll. or Univ. □Vocational	C. LO (SCHL-ELM) D. (SCHL-SECD) D. (SCHL-POST) A. (SCHL-VOCL) D.	CAL GOVERNMENT Office (LOCG-OFFC) Storage (LOCG-STRG) Service (LOCG-SERV) Library (LOCG-LBRY)
ODE	2. ULTIMATE OWNER County (CNTY) WCity (CITY) Township (TOWN)	CEducation Agent Ceduca	gency (SCHL-ADMN) in (SCHL-ADMN) (SCHL-OTHR)	Police (LOCG-PLCE) Fire (LOCG-FIRE) OTHER (LOCG-OTHR)
BUILDING	□State (STAT) □Public School (PUSC) □Private School (PRSC) □Non-Profit Association (NPAP) □Indian Tribe (INDN)	b. PUBLIC CARE Dursing Horr Long Term C Rehab. Facili Public Health Res. Child C	ae (PBCR-NURS) d. HC are (PBCR-TERM) □ ty (PBCR-RHAB) □ ty (PBCR-RHAB) □ are Ctr. (PBCR-RCCC)	OSPITALS General (HOSP-GENL) Tuberculosis (HOSP-TUBR) OTHER (HOSP-OTHR)
			an a	
C	Instructions: With reference to page 23 entitle just Federal funding, then answer the question	d Funding Information, de s correctly for the situatio	stermine if the facilities are eligible fo n. This section must be signed and da	or both Faderal and State funding or ated by the head of the organization
	Have you received a mini-audit grant before Have you previously applied for mini-audit f Do you wish to apply for mini-audit funding Date	? ☐ Yes, (MA No unding? An Yes ☐ No ? ☐ Yes XA No 	ets if necessary.)	
II-AUDIT IDING REQUEST	Date Name		· · · ·	
NIN	Signature			

Check the type of energy report which was completed and submitted prior to this mini-audit report.

□ Elementary School Energy Report (Form No. ED-00444-02) □ Secondary School Energy Report (Form No. ED-00445-02) ☆ Existing Building Energy Report (Form No. EN-00041-01)

1)

ENERGY REPORT CHECK-OFF

> MINI-AUDIT STATEMENTS

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems. I recommend that this <u>Should not</u> be the subject of a maxi-audit. (should should not)

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building (should not) (should should not)

undergo further solar conversion analysis, and/or_____Shouid not_____undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources) (should not)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Witnessed by:

Randy Smith		
Mini-Auditor's Name (Print or Type)		6
Kenny Snot	20	16
Signature		
Rieke Carroll Muller Associa	tes,	Inc.
Firm Name (if none, enter none)	Dirit waangeningeningen dirit	
P.O. Box 130, Hopkins, MN	55343	
Address		
612 - 935-6901		
Phone	C.D.W. 0-48050000000000000000000000000000000000	and the second difference
Sept. 30, 1980		
Date		01.2 millionne06200730

Building Organizational Authority (Print or Type)

Signature

Date

	NAME POSITION	ORGANIZATION
	Randy Smith Certified Mini-Auditor	Rieke Carroll Muller Associates
	Rienert Ege Maintenance Foreman	City of Bloomington
	Richert Ege natification for clian	
	1	
53		
33		
<f< th=""><th></th><th></th></f<>		
	BRIEL DECONDICAL OF OFFICIAL SUIL DIVID CONDITION /	
IG I	Good Janming House	tion)
	dood, warming house	
	MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilit	ation, conversion from one building type to another)
z	None	
2	STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, conc	crete)
NN N	Wooden Rafters	·····
198	POOFING MATERIAL (a far and south the first state	
135	Take and Charles at and gravel, sningles, tile)	
٥ś	lar and Gravel	
		ĸŧŎĊŎĸŎĊŎŦŦĬĬĬĬŔĸĬĬŎŎŢŎŧĊŎŢŎġĔŎŎţĊĸĊŢŎġĊŎŢŎġŎĊġŎĸġŎţĸġţĸġġĸġġĸĸġĸŢĸĸĸĸĸĸġĸĸĸĸĸĬĸĸĸĬĬĸĸĬĬĬĸŎĬŎŎĸĸĸĸĸĸĸĸĸĸ
6 8		
H	INSTRUCTIONS: Correctly answer the following questions for the building being	mini-audited.
	Is there open land adjacent to the building?	######################################
	AXYes INO	t
	Solar collectors need to be located in an upshaded area, to the soot of the building on	débe opublisher a statistic de la strande de la transfer de la strande de la strande de la strande de la strand
	3 p.m.?	o me south racing wan dhanaded between the hours of sain and
	Roof: XXYes 🗆 Ng,	
	South facing Wall: XX Yes D No	
	If the root or wall are partly shaded, what perceptage of the surface is useholded	
	% of roof unshaded%	
	% of south facing wall unshaded%	
	What is the overall share of the building O	
	Square Directangle DH-shaped DE-shaped Dother (specify)	
	is the root of the building flat or pitched?	
	When - bucued	
	If pitched, what is the compass orientation of the ridgeline?	
	If pitched what is the same of the first of the same o	
	in pitched, what is the angle that the roof makes with horizontal?	
	Are there large obstructions on the roof such as chimneys, rooms for mechanical	aquipment ventilating units water towars ato?
	C Yes X KINo	adolphient, vennering units, weits towers, etc.
	What is the exterior facing material facility in Face Bri	ck
	when is the exterior facing material for the south facing wall?	
	What percentage of the south facing wall is glass? $_20_{_}$ %	
	Is the building's space beating on the section and the section of	
	AAYes O No	o answer indicates the equipment is in a separate building.)
	If the space heating equipment is inside the building, where is it located?	
	An Ground Floor U Basement U Roof U Other (specify)	
IN	Is the building's water heating equipment located within the building? (A no ane	wer indicates the equipment is in a concrete building)
Zz	XXYes DNo	ner marcarde me oguipment is in a separate building)
٣ġ	If the water heating equipment is to the second second	
82	Ground Floor Basement Other (specific)	
AA	An and a subman a Other (specify)	
195	Is the water heating system a central system, does it consist of multiple units, or	is it a combination of the central and multiple units?
σZ	KCentral ロ Multiple ロ Combination	······································

Instructions. Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of

20% SAVINGS

J

ENERGY TYPE ENERGY USAGE CONVERSION FACTOR Electricity - - - Fuel 1 - - - - Fuel 2 - - - - - TOTAL -	BTU USAGE
Electricity Image: Conversion of the mini-auditor after the walk-thru portion of the mini-audit. First, check the state the roughly estimated range of the percent of total electricial and fuel consumption which would be saved resulting from of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by percentages by the annual electrical and fuel consumption data on the energy report.	
Fuel 1	
Fuel 2 20% SAVINGS YEAR Fisca TOTAL 20% SAVINGS YEAR Fisca ENERGY USAGE CONVERSION FACTOR Electricity Fuel 1 Fuel 1 Fuel 2 TOTAL Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check thru state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting fro of the new mini-audit oportunities listed in section L. Secondly, calculate the range of energy and cost savings by percentages by the annual electrical and fuel consumption data on the energy report. Check two boxes in each category — Bange of Electrical Savings — XXX	
TOTAL 20% SAVINGS YEAR Fisca ENERGY TYPE ENERGY USAGE CONVERSION FACTOR Electricity Electricity Electricity Fuel 1 Fuel 2 Electricity TOTAL Fuel 2 Electricity Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the state the roughly estimated range of the percent of total electricial and fuel consumption which would be saved resulting from of the mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by percentages by the annual electrical and fuel consumption data on the energy report. Check two boxes in each category — Bange of Electrical Savings — X00 0% D1%% D 10% D 20% D 20% D 20%	
20% SAVINGS YEAR Fisca ENERGY TYPE ENERGY USAGE CONVERSION FACTOR Electricity	C 20122929-4449049-674-674992-6994-97494474999999
ENERGY TYPE ENERGY USAGE CONVERSION FACTOR Electricity	Year
Electricity Fuel 1 Fuel 2 TOTAL Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from of the mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by percentages by the annual electrical and fuel consumption data on the energy report. Check two boxes in each category — Bance of Electrical Savings = XXX 0%	BTU USAGE
Fuel 1 Fuel 2 Fuel 2 TOTAL Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by percentages by the annual electrical and fuel consumption data on the energy report. Check two boxes in each category — Bange of Electrical Savings = X00 0% D1%% D 10% D 15% D 20% D 25% D other	
Fuel 2 TOTAL Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by percentages by the annual electrical and fuel consumption data on the energy report. Check two boxes in each category — Bange of Electrical Savings = X00 0% D1%% D 10% D 20% D 25% D other	
TOTAL Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting fro- of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by percentages by the annual electrical and fuel consumption data on the energy report. Check two boxes in each category — Bange of Electrical Savings — XXX 0% — XXX 00% — 10% — 15% — 0.20% — 0.25% — 0.00%	
Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by percentages by the annual electrical and fuel consumption data on the energy report. Check two boxes in each category — Bange of Electrical Savings — XXX 0% — D1X% — D 10% — D 15% — D 20% — D 25% — D otherwise of the saved results of the saved results of the saved results of the saved results of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by percentages by the annual electrical and fuel consumption data on the energy report.	
Check two boxes in each category —	appropriate boxes wh the implementation o nultiplying the estima
Range of Electrical Savings — XXX 0% DXXX D 10% D 15% D 20% D 25% D atb	
	r (specify)
Range of Fuel Savings 🗆 0% 🛱 🍇 🖓 🖾 10% 🗆 15% 💭 20% 💭 25% 💭 oth	r (specify)
Calculate ranges of energy and cost savings —	
Range of Electrical Savings	

to to to to _382.36 19.12 5 8781 439.1 5 kwh upper bound % kwh. % х 3 **Range of Fuel Savings** Range of Fuel Savings 43.7x10 Btu Annual Fuel Dollars Spent Annual Fuel Range of Fuel Dollars Savings Consumption 87.4x10 Btu % Range % Range 5 5 258.53 12.93 lower bound % х to to SAVINGS ESTIMATION to to 87.4x10 8<u>7.4x10⁶ вти</u> 10 % <u>\$ 258.53</u> 25.85 10 upper bound % \$

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification acheme for energy conservation opportunities listed on pages 25 through 37. This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.

	OPTIONAL: OPTIONAL:					
ITEM NO.	CLASSIF N MAJOR CLASS	ICATION O. SUB CLASS	PAST ENERGY CONSERVATION ACTIONS	ENEAGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	5	2	Routine maintenance schedule.		ang ng mang ng	nan Jona Maria an an ann an Anna an Ann
			ĦĨĨĬĸĊŎĸŦŎŎŎŦŎŢŎĊĨĬŎĊŎĸĸĸŎŎĊĊĿĊĸĔŎĸŎĊĸŢĬĸĊŊŦŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎ			
			₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩			
			ႳႹჂჂჂჂႹႵ ႹჂჼႮჂႳႹႵჼჄჼႳႦႳჼ ႦჼჼჼჼႹჂჂჼჂჂჿ ჄჿჄჂჂჂჿႼჼჼჂჼჼჼ ჂჂჂჂჂ			
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			μουρικός και και τη προστηρική τη προστηρική τη τη προστηρική τη τη προστηρική τη τη προστηρική τη προστηρική τ Γ			
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		1				2
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Note Reproduce this page as necessary

K

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

<u></u>					OPTIONAL	
	CLASSIF	ICATION			ENERGY	
ITEM	N	0.	NEW MINI-AUDIT OPPORTUNITIES	ENERGY	COST	DATE OF IMPLEMENTATION
NO.	MAJOR	SUB		SAVINGS	SAVINGS	
	CLASS	CLASS			ļ	
]]	1		Keep all controls free of dust.			
2	<u>م</u>	1		han an ann an Anna an Anna an Anna		
4	6		Add insulation between ratters.			
					ļ	
3	2	10	Replace single glazed windows with		1	
			double glazed thermonanes			
Λ	2	11	Donlago bigh windows with insulation		1	
1	6	11	Replace high windows with insulation			
			wall panels.			
5	3	1	Check the calibration of all control	lers		
			and devices for proper settings and			
			apanations			
			operations.			
					<u> </u>	
6	3		65°F maximum occupied, 60°F maximum		1	
			unoccupied.			
7	3	1	Consider turning heat off after ice		Γ	
			skating season is over		and the second se	
0	+		A sharing season is over.		<u> </u>	
0	3	3	Make sure that all tans, frequently			
			inoperative in unit heaters, fan coi	1		
	Ι		units, and unit ventilators are runn	L	1	
			ing normally to increase the best		1	
	<u> </u>		ing normarry to increase the neat	<u> </u>	<u> </u>	
			transfer rate from heating coils.]		
1 9	4	1	Instruct occupants and maintenance	1	1	
	·		nonconnol to quitab ass all lights			
Testa and a second s			personnel to switch off all lights	ł		
			when they are not needed.		ł	
					1	
10	4	3	Clean fixtures and lamos regularly	1	1	
1	1		forean riveares and ramps regularly.	1.		
19	+	<u> </u>				
	4	3	Replace lamps in groups before they			
			burn out to maintain higher average			
		1	light output non fixture	1	1	
			l'ight output per l'ixture.			
1		+		<u> </u>	<u> </u>	
12	4	4	Use lower wattage lamps to provide t	he		
			necessary illumination.			
13	4	Δ	Allow part of a lighting system to b	6	1	n general de deser renn parte a gran dat das de partes andres estas de service de la comparte de service de la
			This part of a righting system to b	F		
	+		Lurned off, while maintaining the	+	4	
			necessary light.			
14	5	1	Keep records of the operating schodu	10	Γ	
1 '			mental and the operating schedu	10,		
	+	+	fuguruly energy consumption and purch	ase		
1			of any new equipment that affects en	ergy		
			consumption of efficiency of the bui	lding		
		T	These records will indicate the impo	L+	1	
			I nese records with indicate the illipa	μL		1
15	$+ \epsilon$	+	Lot energy conservation measures		+	
10	1 2		Review the record books on a regular	ar		
		1	basis.			
16	6	1 1	Adjust water supply to 100°F			
-	1	1	I and added a take t			
1	+	+		+	+	
17	6	2	[All electric heating equipment shoul	dl 🛛	1	
			be checked for corroded elements and		1	
	1000 C					

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW PORTUNITIES

NEW CPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

				OPTIONAL:		
ITEMA	CLASSIF			ENERGY	ENERGY	
NO.	MAJOR	SUB	NEW MINI-AUDIT OPPORTUNITIES	SAVINGS	COST SAVINGS	DATE OF IMPLEMENTATION
	CLASS	CLASS	lace connections and repaired as			
			required			
18	6	2	Periodically drain and remove the		ananya manana mananini	
			sediment.			
19	6	2	Shut down heating equipment when the			
	L		hot water is not required.			
20	7	4	Keep all heat exchanger surfaces cle	an .		
			on unit heaters. Lheck air-to-tuel	ratio		
			and adjust as necessary.			
21	7	4	Follow guidelines suggested for fan			
			and motor maintenance.		ļ	and was and a state of the stat
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barrassanasanas	-	1	1		dimmer and the second	L

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

MINI-AUDIT REPORT

	BUILDING NAME		NAME OF ORGANIZATION	DATE
A	TARNHILL PARK SHELTER		CITY OF BLOOMINGTON	10/27/80
	9750 Little Road		2215 West Old Shakopee Roa	ıd
TACT	сіту Bloomington	zip code 55431	сіту Bļoomington	ZIP CODE 55431
CON	Randy Smith	TELEPHONE 935-6901	contact person Arthur Jensen	telephone 881–5811
		nin and a second se		
B	Instructions: For blocks 1 and 2 check the box describes the building type and then within th	which best fits the building e category check off the s	gownership conditions. For block 3 determine whi bub category befitting the building function.	ch of the four categories
	1. OWNERSHIP TYPE ØPublic (PUB) ONon-Profit Association (NAP)	3a. SCHOOLS Elementary Secondary Coll. or Univ.	C. LOCAL GOVEL (SCHL-ELM) □Office (SCHL-SECD) □Storage (SCHL-POST) ₩Service	RNMENT (LOCG-OFFC) (LOCG-STRG) (LOCG-SERV)
CODE	2. ULTIMATE OWNER County (CNTY) City (CITY) Township (TOWN)	Divocational Education Ag Administratio DOTHER	INTERNAL (SCHL-VOCL) DLIbrary International (SCHL-ADMN) DFire (SCHL-ADMN) DFire (SCHL-OTHR) DOTHER	(LOCG-EBRY) (LOCG-PLCE) (LOCG-FIRE) (LOCG-OTHR)
BUILDING	UState (STAT) □Public School (PUSC) □Private School (PRSC) □Non-Profit Association (NPAP) □Indian Tribe (INDN)	D. POBLIC CARE DNursing Hom Long Term C Rehab. Facili DPublic Health Res. Child Ca	e (PBCR-NURS) ☐General are (PBCR-TERM) ☐Tuberculos: ty (PBCR-RHAB) ☐Tuberculos: Ctr. (PBCR-RHCTR) are Ctr. (PBCR-RCCC)	(HOSP-GENL) s (HOSP-TUBR) (HOSP-OTHR)
	If eligible for both Federal and State Funding: Have you received a mini-audit grant before Have you previously applied for mini-audit funding? Do you wish to apply for mini-audit funding? Date	? U Yes X No unding? U Yes No ? Yes No ? Yes No unding? Yes No unding? Yes No irom: (Use additional shee	ets if necessary.)	
MINI-AUDIT FUNDING REQUEST	Date Name Signature			

Check the type of energy report which was completed and submitted prior to this mini-audit report.

□ Elementary School Energy Report (Form No. ED-00444-02) □ Secondary School Energy Report (Form No. ED-00445-02)

Control Control Charge Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not save at least (did. did not)

Based upon my observation of the physical characteristics of this building and the building's major energy using systems. I recommend that this <u>Should not</u> be the subject of a maxi-audit. (should should not)

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building (should not)

undergo further solar conversion analysis, and/or_____Should_not_____undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources) (should not)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith	
Mini-Auditor's Name (Print or Type)	
Kandall Suit	206
Signature	
Rieke Carroll. Muller Asso	ociates, Inc.
P.O. Box 130	Nadov Alamata, policificant and personal distances of the Minister Distances of
612-935-6901 Phone	
October 27, 1980	

E

NI-AUDIT

34

Building Organizational Authority (Print or Type)

Signature

Witnessed by:

Date

F	NAME	POSITION	ORGANIZATION
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Associates,
	Dave Elzea	Building Maintenance	City of Bloomington
AUDIT			
G	BRIEF DESCRIPTION OF GET Good, Warming Ho	NERAL BUILDING CONDITION (i.e. type, and function)	on)
ł	MAJOR CHANGES PLANNED	WITHIN NEXT 15 YEARS (i.e. demolition, rehabilita	tion, conversion from one building type to another)
NO	None	COE BOOE (i.e. matel beaus, wooden reffere conc	(4)
MAT	Wooden Rafters	S OF HOOF (i.e. metal beams, wooden raiters, concl	
L L L L L L L L L L L L L L L L L L L	ROOFING MATERIAL (i.e. tar	and gravel, shingles, tile)	
ã≚	Tar and Gravel		
		nuer the following questions for the building being	mini auditad
n	Is there open land adjacent to	the building?	
	Q Yes O No		
	Solar collectors need to be loca 3 p.m.? Root: Wyes INo South facing Wall: XXYes	ted in an unshaded area. Is the roof of the building and	i the south facing wall unshaded between the hours of 9 a.m. and
	If the roof or wall are partly sh % of roof unshaded % of south facing wall unsh	naded, what percentage of the surface is unshaded? % aded%	
	What is the overall shape of th ♀ square □ rectangle □	ne building?] H-shaped E-shaped other (specify)	
	Is the roof of the building flat ⊠ flat □ pitched	or pitched?	
	If pitched, what is the compas	s orientation of the ridgeline?	
	If pitched, what is the angle the	nat the roof makes with horizontal?º	
	Are there large obstructions o	in the roof such as chimneys, rooms for mechanical	equipment, ventilating units, water towers, etc?
	What is the exterior facing ma	iterial for the south facing wall?F	ace Brick
	What percentage of the south	facing wall is glass?%	
	ls the building's space heating AYes □ No	g equipment located within or on the building? (A n	o answer indicates the equipment is in a separate building.)
	If the space heating equipmen AAGround Floor D Base	nt is inside the building, where is it located? ment	
ENTIAL	ls the building's water heating XXYes □ No	g equipment located within the building? (A no answ	ver indicates the equipment is in a separate building.)
RMATIC	If the water heating equipmen XXGround Floor Base	nt is inside the building, where is it located? ment Other (specify)	
SOLA	is the water heating system a XXCentral □ Multiple □	central system, does it consist of multiple units, or Combination	is it a combination of the central and multiple units?

Instructions Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

	Fiscal Year		
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

		20% SAVIN	20% SAVINGS YEAR		
	ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE	
20% SAVINGS DATA	Electricity				
	Fuel 1				
	Fuel 2				
	TOTAL				

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

8		and a state of the		an an an ann an an an an an an an an an			. (
and the second	Check two boxes in each category —									
	Range of Electrical Savings —	X5X0%	X 🖄 5%	0 10%	0 15%	0 20%	0 25%	other (specify)		
	Range of Fuel Savings -	0%	X 🗘 5%	XØ 10%	D 15%	□ 20%	25%	O other (specify)		
					and the second se		and the second se			

Calculate ranges of energy and cost savings -

Range of Electrical Savings

1										
	% Range	Annual Electrical Consumption	Range of Energy Savings % Range	Annual Electrical Dollars Spent	Range of Electrical Dollars Savings					
-	lower bound % ×	<u>11894 </u>	kwh,% x	\$ 510,35 =	\$0					
	to		to to		to					
	upper bound <u>5</u> % x	11894kwh =	<u>594.7 kwh, 5 % </u>	\$ 510.35	\$ 25.52					
3			Range of Fuel Savings							
	% Range	Annual Fuel Consumption	Range of Fuel Savings% Range	Annual Fuel Dollars Spent	Range of Fuel Dollars Savings					
	lower bound <u>5</u> % x	1 <u>2.4x10</u> Btu =	62.0x10 ⁵ Btu, <u>5</u> %	<u>\$ 364.77</u> =	<u>\$ 18.24</u>					
Z	to	7	to to		to					
NGS	upper bound <u>10</u> % x	1 <u>2_4x10</u> Btu =	12.4x10Biu, 10 %	<u>\$ 364.77</u> =	<u>\$_36.48_</u>					
SAVII	The mini-auditor is not responsion not fall between the roughly es	ible if actual savings resultin tlimated ranges which are s	g from the implementation of the energy pecified.	rgy conservation opportuniti	es listed in section I do					

In ai th vi cit se	Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.						
				OPTIONAL:	OPTIONAL:		
ITEM NO.	CLASSIFICATION EM NO. O. MAJOR SUB		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATIO	
2-9-9-0-	CLASS	CLASS					
Mangala Man Kasala Japan Ka							
a a ga da mar a ga jana a							
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and the second							
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NEW DPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

	·····			OPTIONAL:	OPTIONAL	
ITEM NO.	CLASSIF NO MAJOR	ICATION D. SUB	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.		4	
2	2	1	Add insulation between rafters.			
3	2	2	Weatherstrip all exterior doors.			
4	2	8	Caulk all cracks that allow air and moisture into the building.			
5	2	10	Inspect window closing and locking devices to insure a tight window.			
6	2	10	Replace single glazed windows with double glazed thermopanes.			
7	3	1	Check the calibration of all control and devices for proper settings and	lers		
			operations.			
8	3	1	65 ⁰ F maximum occupied, 60 ⁰ F maximum			
9	3	1	Consider turning off heat when build			
			of time.			
10	3	3	Make sure that all fans, frequently inoperative in unit heaters, fan coi			
			units, and unit ventilators are runni normally to increase the heat transf	ng er		
			rate from heating coils.			
11	4	1	Instruct occupants and maintenance personnel to switch off all lights			
			when they are not needed.			
12	4	3	Clean fixtures and lamps regularly.			
13	4	3	Replace lamps in groups before they burn out to maintain higher average			
			light output per fixture.			
14	4	1	Use lower wattage lamps to provide the necessary illumination			
15	4	1	Allow part of a lighting system to be turned off, while maintaining the			
			necessary right.			
16	5	1	Keep records of the operating schedu monthly energy consumption and purch	le, ase		
۱ 			of any new equipment that affects en consumption of efficiency of the bui	lergy Id-		
			ing. These records will indicate the			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.
Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification acheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

					OFTIONAL	
	CLASSIF	SIFICATION			ENERGY	
ITEM NO.	MAJOR CLASS	O. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES		COST SAVINGS	DATE OF IMPLEMENTATION
17	5	1	Review the record books on a regular			
18	6	1	Adjust water supply to 100°F			gann gann di dagan da kan yang yang yang da kan da gan yang di da kan di gan yang da kan da kan di gang da kan
19	6	2	All electric heating equipment shoul be checked for corroded elements and	d		
			loose connections and reparied as required.			
20	6	2	Shut down heating equipment when the hot water is not required.			
21	7	4	Turn off gas pilots for furnaces, bo and space heaters during the non-hea	ilers t-		
			ing months and during long unoccupie periods.	d		
22	7	4	Keep all heat exchanger surfaces cle Check air-to-fuel ratio and adjust	an.		
			as necessary on unit heaters.			
23	7	4	Follow guidelines suggested for fan and motor maintenance.			
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			· · · · · · · · · · · · · · · · · · ·			
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Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW BOPPORTUNITIES

MINI-AUDIT REPORT

FORM NO. MIN-01

r				
	BUILDING NAME		NAME OF ORGANIZATION	DATE
	Arnie Johnson Field House		City of Bloomington	9-30-80
	BUILDING ADDRESS 9000 Portland Avenue Sout	h	ADDRESS 2215 West Old Shakopee F	Road
ACT	city Bloomington, MN	ZIP CODE 55431	CITY Bloomington, MN	ZIP CODE 55431
TAL	PERSON COMPLETING FORM	TELEPHONE	CONTACT PERSON	TELEPHONE
0 A	Randy Smith	935-6901	Arthur Jensen	881-5811
·				
	Instructions: For blocks 1 and 2 check the box describes the building type and then within the 1. OWNERSHIP TYPE DPublic (PUB) Non-Profit Association (NAP) 2. ULTIMATE OWNER County (CNTY) City (CITY) Drownship (TOWN) Bate (STAT) Public School (PUSC) Private School (PRSC) Non-Profit Association (NPAP) Indian Tribe (INDN) Instructions: With reference to page 23 entitle just Federal funding, then answer the question If eligible for both Federal and State Funding: Have you received a mini-audit grant before Have you previously applied for mini-audit funding Date Name Signature. If eligible for Federal funding only: Have you received a mini-audit grant before Have you previously applied for mini-audit funding Date Signature. If eligible for Federal funding only: Have you received a mini-audit grant before Have you previously applied for mini-audit for Do you wish to apply for mini-audit funding The 50% match for Federal fundis will come	which best fits the building e category check off the Belementary Secondary Coll. or Univ Vocational Education Ag Administratic OTHER b. PUBLIC CARE Nursing Horn Long Term C Rehab. Facili Public Health Res. Child C d Funding Information, de s correctly for the situatio ? Yes XX No unding? XX Yes No ? Yes XX No ? Yes XX No ? Yes XX No inding? Q Yes No inding? Q Yes No inding? Yes No inding? Yes No inding? Yes No	g ownership conditions. For block 3 determine wi sub category befitting the building function. (SCHL-REM) (SCHL-POST) (SCHL-POST) (SCHL-ADMN) on (SCHL-ADMN) (SCHL-ADMN) (SCHL-ADMN) (SCHL-ADMN) (SCHL-OTHR) (SCHL-OTHR) (SCHL-OTHR) (SCHL-OTHR) (SCHL-ADMN	eral and State funding or head of the organization
QUEST	Date			
IDIT G RE	Name		-	
DIN				
MINI	Signature.			

Check the type of energy report which was completed and submitted prior to this mini-audit report.

□ Elementary School Energy Report (Form No. ED-00444-02) □ Secondary School Energy Report (Form No. ED-00445-02) ☆ Existing Building Energy Report (Form No. EN-00041-01)

ENERGY REPORT

E

MINI-AUDIT

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K_	save at leas
20% of the building's energy consumption as specified in section I.	(did, did not)

Based upon my observation of the physical characteristics of this building and the building's major energy using systems. I recommend that this should should not be the subject of a maxi-audit.

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the inform	ation referred to in section	F i recommend that this building	should not	
based upon the mormation in section 2 and the morn	about a not	r, riecommend mattins building	(shouid, should not)	
undergo further solar conversion analysis, and/or	snoula not	undergo further analysis of the	renewable resources	waste
wind, wood. (Circle proper resources)	(should, should not)	0		

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith	
Mini-Auditor's Name (Print or	Туре)
Krandy Just	206
Signature	
<u> </u>	Muller Assoc., Inc.
Firm Name (if none, enter nor	ie)
PO Box 130	Hopkins, MN 55343
Address	
(612) 935-690	1·
Phone	
September 30,	1980
Date	

Witnessed by:

Building Organizational Authority (Print or Type)

Signature

Date

61

F	NAME	POSITION	ORGANIZATION
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
	Dave Elzea	Building Maintenance	City of Bloomington
5			
AUD			
·			
G	BRIEF DESCRIPTION OF GE	NERAL BUILDING CONDITION (i.e. type, and fund	ction)
	MAJOR CHANGES PLANNE	DUSE, REST ROOMS DWITHIN NEXT 15 YEARS (i.e. demolition, rehabili	tation, conversion from one building type to another)
Z	None		
ING	STRUCTURAL COMPONENT Wooden Rafters	S OF ROOF (i.e. metal beams, wooden rafters, con	crete)
UILD FOR	ROOFING MATERIAL (i.e. ta	r and gravel, shingles, tile)	
۵£	Siringres		
H	INSTRUCTIONS: Correctly a	nswer the following questions for the building being	g mini-audited.
	Is there open land adjacent to	o the building?	
	Solar collectors need to be loc	ated in an unshaded area. Is the roof of the building a	nd the south facing wall unshaded between the hours of 9 a.m. and
	3 p.m.? Roof: XXYes □ No South facing Wall: XXYes	□ No	
	If the roof or wall are partly s % of roof unshaded % of south facing wall unst	haded, what percentage of the surface is unshaded % naded%	?
	What is the overall shape of t □ square XX rectangle	he building? □ H-shaped □ E-shaped □ other (specify)	
	Is the roof of the building flat	t or pitched?	
	If pitched, what is the compa	iss orientation of the ridgeline?North-S	outh & East-West
	If pitched, what is the angle	that the roof makes with horizontal? <u>30</u> •	
	Are there large obstructions	on the roof such as chimneys, rooms for mechanic	al equipment, ventilating units, water towers, etc?
	What is the exterior facing m	naterial for the south facing wall?Fa	ce Brick
	What percentage of the sout	h facing wall is glass?10%	
1	ls the building's space heatir ⅫYes □ No	ng equipment located within or on the building? (A	no answer indicates the equipment is in a separate building.)
	If the space heating equipme XXGround Floor D Base	ent is inside the building, where is it located? ement	
NTIAL	Is the building's water heatir	ig equipment located within the building? (A no and	swer indicates the equipment is in a separate building.)
R POTE	If the water heating equipme XKGround Floor D Base	ent is inside the building, where is it located? ement D Other (specify)	
SOLA	Is the water heating system Central XKMultiple	a central system, does it consist of multiple units, o Combination	r is it a combination of the central and multiple units?

			BASE P	ERIOD YEA	R		Fiscal Year	
	ENERGY TYPE	ENERGY	USAGE	с	ONVERSION F	ACTOR	BTU US	AGE
	Electricity							
	Fuel 1							
	Fuel 2							
	TOTAL		1		U APALIS/IF/IF/IF/A PALIS/APALIS/AFA			
		L	20% SA	/INGS YEAF	۹		Fiscal Year	
	ENERGY TYPE	ENERGY	USAGE	с	ONVERSION F	ACTOR	BTU USAGE	
	Electricity							
	Fuel 1							
	Fuel 2		<u></u>		Robbits Program and an annual statements and an annual statements and an annual statements and an annual statem			
	TOTAL							
Instru state t of the perce	ictions: This section is to be the roughly estimated rang a new mini-audit opportun intages by the annual elect	e completed by the min e of the percent of total ities listed in section trical and fuel consum	i-auditor after t electrical and f L. Secondly, c ption data on t	he walk-thru uel consump alculate the he energy re	portion of the m ition which wou range of energ eport.	nini-audit. Firs Id be saved res 39 and cost sa	t, check the appropriat sulting from the impler avings by multiplying	te boxes whic nentation of a the estimate
Check	k two boxes in each catego	ory —						
Range	e of Electrical Savings — 🕽	XXX 0% XXX 5%	□ 10%	0 15%	□ 20%	□ 25%	other (specify)	
Range	e of Fuel Savings —	□ 0% XXX 5%	XIX 10%	□ 15%	□ 20%	□ 25%	d other (specify)	
Calcu	late ranges of energy and	cost savings —						
			Range of	Electrical Sa	vings			
lower	% Range bound % x	Annual Electrical Consumption 75250 kwh	Range c Sav = 0	f Energy ings kwh,	% Range %	Annual El Dollars \$ <u>643</u>	ectrical Rang Spent Dol 7.44 = \$	e of Electrica Ilars Savings 0
	to 5	75250	3762	• • 5 _{kwb} ·	to 5 💑 y	, 643	7.44 <u> </u>	_{to} 321.87
upper	r bound % x	kwh			/// ^	Ψ		

20% SAVINGS

SAVINGS ESTIMATION

lower bound Btu _Btu, 46.1x10⁶ to to 10 46.1x10 10 1198.59 upper bound Btu . Btu, % x %

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

\$ <u>119.86</u>

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Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.

			· · · · · · · · · · · · · · · · · · ·	OPTIONAL	OPTIONAL: OPTIONAL:			
ITEM NO.	CLASSIF MAJOR	SUB	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION		
1	5	CLASS 2	Routine maintenance schedule	ganda amin'ny sora a				

10104.7 Propulsiona					1			
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NEW DPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

L						OPTIONAL	
		CLASSIF	ICATION	N		ENERGY	
	ITEM NO.	MAJOR CLASS	D. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	COST SAVINGS	DATE OF IMPLEMENTATION
ſ	1	1	1	Keep all controls free of dust.			
Γ	2	2	1	Check the amount of insulation in th	e		
	3	2	1	Add insulation in attic spaces if needed.			
	4	2	2	Weatherstrip all exterior doors			
	5	2	2	Replace an existing door with one of a higher R-value.			
Γ	6	2	8	Caulk all cracks that allow air and moisture into the building.			
	7	2	8	Caulk around all pipes, louvers, and			
Γ	8	2	10	Inspect window closing and locking			
	9	2	10	Replace single glazed windows with			
	10	3	1	Check the calibration of all control and devices for proper settings and	lers		
Γ				operations.			
	11	3	1	65° maximum occupied, 60° maximum			
	12	3	2	Clean and remove obstructions from			
				(diffusers, registers and grillers).			
				of all dirt and foreign materials.		^	
	13	3	3	Inspect drive belts on fans. Adjust			
	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -			proper operation.			
	14	3	3	Make sure that all fans, frequently			
				coil units, and unit ventilators are	2		
				transfer rate from heating coils.			
	15	3	3	Inspect ductwork for air leakage.			
	16	3	3	Clean and replace filters periodica	11y.		
	17	4	1	Instruct occupants and maintenance personnel to switch off all lights			· ·
r				when they are not needed.			
	18	4	3	Clean fixtures and lamps regularly	•		

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification achieve of energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

				OPTIONAL: OPTIONAL		
ITEM NO.	CLASSIF NO MAJOR CLASS	ICATION O. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
19	4	3	Replace lamps in groups before they burn out to maintain higher average			
			light output per fixture.			
20	4	4	Use lower wattage lamps to provide the necessary illumination.			
21	4	4	Allow part of a lighting system to be turned off, while maintaining the			
			necessary light.			
22	5	1	Keep records of the operating schedu monthly energy consumption and purch	le, ase		
			of any new equipment that affects en	ergy		
			ing. These reacrds will indicate the			an a
	L		impact of energy conservation measure	ies.		
23	5]	Review the record books on a regular basis	1		
24	5	2	Establish a specific maintenance sc for each building to ensure that al	edule		
}			componenets of the specific building] ,		
25	6	1	Adjust water supply to 100°F for all except special requirements (dish-			
			washer supply units, etc).			
26	6	2	The burner system of fossil-fuel wa heaters should be kept clean and in	ter		
			good operating condition.			
27	6	2	All electric heating equipment shou be checked for corroded elements an	ld		
			loose connections and repaired as required.			
28	7	3	If the firing rate of gas burners i too high, it causes short cycling a	s nd		
			excessive fuel consumption. Too lo a rate required constant operating	M		
			and delivers inadequate heat to the spaces.			
29	7	4	Turn off gas pilots for furnaces, b	dilers		
			heating months and during long unoccupied periods.			
30	7	4	Keep all heat exchanger surfaces cl on unit heaters. Check air-to-fuel	ean		
1			ratio and adjust as necessary.			
31	7	4	Follow guidelines suggested for fan and motor maintenance.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW PPORTUNITIES

		MINI-AUDIT	REPORT	F	ORM NO. MIN-01	
A	BUILDING NAME Valley View Pool - Bath Hou BUILDING ADDRESS 201 F 90th Street	ISE	NAME OF ORGANIZATIONDATECity of Bloomington9/30/80ADDRESS2215 Wort Old Shakopee Poad			
CONTACT	CITY Bloomington, MN PERSON COMPLETING FORM	ZIP CODE 55431 TELEPHONE 035-6001	CITY Bloomington, CONTACT PERSON	<u>MN</u>	zip code 55431 Telephone 881-5811	
B	Instructions: For blocks 1 and 2 check the box describes the building type and then within the	which best fits the building a category check off the s	ownership conditions. For ub category befitting the b	block 3 determine which uilding function.	n of the four categories	
	1. OWNERSHIP TYPE XXPublic (PUB) INon-Profit Association (NAP) 2. ULTIMATE OWNER	3a. SCHOOLS Elementary Secondary Coll. or Univ. Vocational Education Ac	(SCHL-ELM) (SCHL-SECD) (SCHL-POST) (SCHL-VOCL) (SCHL-ADMN)	c. LOCAL GOVER Office Storage Service Library Police Cr	VMENT (LOCG-OFFC) (LOCG-STRG) (LOCG-SERV) (LOCG-LBRY) (LOCG-PLCE)	
BUILDING ELIGIBILITY CODE	□County (CNTY) ♡℃City (CITY) □Township (TOWN) □State (STAT) □Public School (PUSC) □Private School (PRSC) □Non-Profit Association (NPAP) □Indian Tribe (INDN)	b. PUBLIC CARE DUBLIC CARE DUBLIC CARE Long Term C Rehab. Facili Public Health Res. Child Ci	n (SCHL-ADMN) (SCHL-OTHR) are (PBCR-NURS) ty (PBCR-TERM) Ctr. (PBCR-RHAB) Ctr. (PBCR-HCTR) are Ctr. (PBCR-RCCC)	d. HOSPITALS General Tuberculosis OTHER	(LOCG-FIRE) (LOCG-OTHR) (HOSP-GENL) (HOSP-TUBR) (HOSP-OTHR)	
С	Instructions: With reference to page 23 entitled just Federal funding, then answer the questions	Funding Information, de s correctly for the situatio	termine if the facilities are n. This section must be sig	eligible for both Federa ned and dated by the he	I and State funding or ad of the organization	
	If eligible for both Federal and State Funding: Have you received a mini-audit grant before Have you previously applied for mini-audit fu Do you wish to apply for mini-audit funding?	? □ Yes XXI No unding? XX Yes □ No ? □ Yes XX No				
	Date					

Signature.

If eligible for Federal funding only: Have you received a mini-audit grant before? Have you previously applied for mini-audit funding? Do you wish to apply for mini-audit funding? The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

12	
с П	
U U U	Date
100	Name
NAU	
ZZ	Signature.
Zũ	

60

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- Elementary School Energy Report (Form No. ED-00444-02)
- Secondary School Energy Report (Form No. ED-00445-02)
- K Existing Building Energy Report (Form No. EN-00041-01)

D

ENERGY REPORT

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesots's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in. I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency 1 am not directly responsible for the day to day operations of this building being audited. I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit. I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building. I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range. did not save at least Based on actual records, the energy conservation operating and maintenance procedures listed in section K_ (did. did not) 20% of the building's energy consumption as specified in section I. be the subject of a maxi-audit. (should, should not) I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria. should not Based upon the information in section E and the information referred to in section F, I recommend that this building _ (should, should not) should not ... undergo further analysis of the renewable resources waste undergo further solar conversion analysis, and/or_ (should, should not) wind, wood. (Circle proper resources) In my judgement, as a mini-auditor, all of the above statements are true and correct. Witnessed by: Randy Smith Mini-Auditor's Name (Print or Type) Building Organizational Authority (Print or Type) 206 7 and Signature Signature Rieke Carroll Muller Assoc., Inc. Date Firm Name (if none, enter none) Hopkins, MN 55343 PO Box 130 Address (612) 935-6901 Phone September 30, 1980 Date MINI-AUDIT STATEMENTS

F	NAME	POSITION	ORGANIZATION
	Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
	Dave Elzea	Building Maintenance	City of Bloomington
		1	
		<i>i</i>	
AUDI. TEAM			
	BRIEF DESCRIPTION OF G		(00)
B	Good, Shower Ho	use for Pool, only during the	summer
	MAJOR CHANGES PLANNE	D WITHIN NEXT 15 YEARS (i.e. demolition, rehabilit	ation, conversion from one building type to another)
Ő	STRUCTURAL COMPONEN	TS OF ROOF (i.e. metal beams, wooden rafters, conc	rete)
MA	Precast Plank		
BUIL	ROOFING MATERIAL (i.e. to Tar and Grave]	ar and gravel, shingles, tile)	
H	INSTRUCTIONS: Correctly a	inswer the following questions for the building being	mini-audited.
	Is there open land adjacent i	o the building?	
	Solar collectors need to be loo	cated in an unshaded area. Is the roof of the building an	d the south facing wall unshaded between the hours of 9 a.m. and
	Roof: XXX Yes INO South facing Wall: XXX Ye	s 🗆 No	
	If the roof or wall are partly % of roof unshaded % of south facing wall uns	shaded, what percentage of the surface is unshaded? % haded%	
	What is the overall shape of ロ square X図 rectangle	the building? ☐ H-shaped □ E-shaped □ other (specify)	
	Is the roof of the building fla XX flat D pitched	t or pitched?	
	If pitched, what is the compa	ass orientation of the ridgeline?	
	If pitched, what is the angle	that the roof makes with horizontal?	
	Are there large obstructions	on the roof such as chimneys, rooms for mechanica	equipment, ventilating units, water towers, etc?
	What is the exterior facing r	naterial for the south facing wall?	Br1CK
	What percentage of the soul	th facing wall is glass?%	
	Is the building's space heati □ Yes □ No NONE	ng equipment located within or on the building? (A r	o answer indicates the equipment is in a separate building)
	If the space heating equipm Ground Floor Bas	ent is inside the building, where is it located? ement	е
IN	Is the building's water heati XX Yes □ No	ng equipment located within the building? (A no ans	wer indicates the equipment is in a separate building)
R POTE	If the water heating equipm	ent is inside the building, where is it located? ement Dother (specify)	
SOLAI	Is the water heating system Central XX Multiple	a central system, does it consist of multiple units, or Combination	is it a combination of the central and multiple units?
	One water heat	er for showers.	
	One water heat One water heat	er for pool. er for concession stand.	

#."

Instructions. Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section. BASE PERIOD YEAR Fiscal Year ENERGY TYPE **BTU USAGE** ENERGY USAGE CONVERSION FACTOR Electricity Fuel 1 Fuel 2 TOTAL 20% SAVINGS YEAR Fiscal Year ENERGY TYPE ENERGY USAGE CONVERSION FACTOR **BTU USAGE** Electricity Fuel 1 SAVINGS Fuel 2 20% DAT. TOTAL Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report. Check two boxes in each category -Range of Electrical Savings - XX 0% XX 5% □ 10% □ 15% 20% 0 25% other (specify) XX 5% 赵10% Range of Fuel Savings ----0% 0 25% 15% 0 20% d other (specify) 2 Calculate ranges of energy and cost savings -Range of Electrical Savings Range of Electrical Annual Electrical Range of Energy Annual Electrical % Range Consumption Savings % Range **Dollars Spent Dollars Savings** 70640 kwh 0 2658.63 0 0 0 lower bound to to to 132.93 5 2658.63 3532 5 70640 kwh upper bound 3 **Range of Fuel Savings** Annual Fuel Range of Fuel Annual Fuel Range of Fuel Consumption Saving % Range % Range **Dollars Spent Dollars Savings** 19.1x10⁰Btu 95.7x10 5 4039.78 lat 201.99 lower bound Btu to to SAVINGS ESTIMATION 19.1x¹ 403.97 19.1x10 10 10 4039.78 upper bound Btu Btu The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do

not fall between the roughly estimated ranges which are specified.

which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37 section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.									
			OPTIONAL: OPTIONAL:						
ITEM NO.	MAJOR	O. SUB	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATIO			
	CLASS	CLASS			0.000				
			· · · · · · · · · · · · · · · · · · ·						
	·								
					1				
	+				<u> </u>				
		ļļ	· · · · · · · · · · · · · · · · · · ·						
	1								
		<u>├</u> ──							
	Τ		***************************************		+				

Note: Reproduce this page as necessary

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation on should only be completed as the recommendation is implemented. This section of the mini-audit peort should be completed by the mini-audit team during the building walk-through.

ļ				(OPTIONAL: OPTIONAL:		
		CLASSIF	ICATION			ENERGY		
	ITEM	NO.	<u>)</u>	NEW MINI-AUDIT OPPORTUNITIES	ENERGY	COST	DATE OF IMPLEMENTATION	
	NO	CLASS	CLASS		SAVINGS	SAVINGS		
t	1	1	1	Koon all controls free of dust				
	1	1		Keep all concrors free of aust.				
ł	2	1	2	Look for loose connections and had	kon hantase a salandan dalam taken tak	Same an		
	2	1	2	LOOK IOF TOOSE CONNECTIONS and bad				
ł				contacts on a regular pasis.				
	3		2	Lubricate motors to reduce wear and				
-				excessive torque.				
	4	1	2	Replace worn or defective motors wit	h			
Ì				<u>motors that are sized as close to</u>				
				the load as possible and use the				
				hughest efficiency motors available.				
1	5	1	2	Where it is impractical to replace				
	Ŭ	•		motors which have low loads and powe	r			
1				factors use capacitors at motor				
				terminals to envior the newon facto	n			
I				Lemmans to correct the power racto	μ			
				to 90%.				
1					ļ			
	6	1	4	Shade outdoor transformer banks from				
$\left \right $				<u>solar radiation.</u>				
	7	3	3	Inspect and lubricate bearings on				
ļ				fans.				
	8	3	3	Inpsect drive belts on fans. Adjust				
				or replace as necessary to ensure				
-1				proper operation.		1		
	9	3	3	Check for packing wear on pumps	<u>}</u>			
				which can cause excessive leakage.				
				Panack to avoid excessive water	<u> </u>	<u> </u>		
				Nepack to avoid excessive mater				
ł	10	<u>-</u>		Wastage and shart erosion.	<u> </u>	<u> </u>		
	10	3	3	Inspect bearings and drive beits on				
				pumps for wear and binding. Adjust				
				repair or replace as necessary.				
ł						L		
	11	3	3	Clean all strainers in piping system	hs			
				to insure full flow of medium.				
	12	4	1	Instruct occupants and maintenance		1		
1	-			personnel to switch off all lights				
				when they are not needed.	1			
}	13	Δ.	2	Clean fixtures and lamos regularly	1	t		
: انت	13	۳	_	orean riveares and ramps regarding.				
	 Л Л	Λ		Deplace lamas in ground before they	+	+	1	
	14	4	3	Replace lamps in groups before they				
-				burn out to maintain nigher average	+	<u></u>		
				light output per fixture.				
		<u> </u>	+	······	+	+		
	15	4	4	Use lower wattage lamps to provide				
10100 10160		ļ	 	the necessary illumination.	ļ	+		
₹; · · · i	16	4	4	Allow part of a lighting system to				
		L	ļ	be turned off, while maintaining				
				the necessary light.				
Susceed								

Note 1 Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

NEW I OPPORTUNITIES

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

	·····			OPTIONAL OPTIONAL				
	CLASSIFICATION		ION		ENERGY			
ITEM NO.	MAJOR CLASS	O. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	COST	DATE OF IMPLEMENTATION		
17	5	1	Keep records of the operating schedu	le				
			monthly energy consumption and pur-					
			chase of any new equipment that affe	cts				
			energy consumption of efficiency of					
			the building. These records will					
			indicate the impact of energy conser	-				
			vation measures.					
18	5	1	Review the record books on a regular basis.					
19	5	2	Establish a specific maintenance					
			that all components of the ensitie					
			Linal all components of the specific	L.,				
20	C	2	<u>Charly filters and studiess waviedic</u>					
20	0	2	Lneck filters and strainers periodic	ally.				
			Llean and/or replace as required.	<u> </u>				
21	Ь	2	The Durner system of tossil-fuel					
		<u> </u>	water neaters should be kept clean					
			and in good operating condition.					
22	6	2	All electric heating equipment shoul	d				
1			De checked for corroded elements and					
			rouse connections and repaired as					
23	6	2	Periodically drain and remove the					
		-	sediment.					
24	6	2	Shut off pumps during unoccupied					
			periods.			× .		
25	6	2	Check the pump motor power input. If		1			
		-	it is less than 60% of namenlate.					
	1		consider a change in the nump or im	eller	1			
			for a more efficient operation					
26	6	5	Reduce the water flow of showers, f	ucets.	1			
	ľ		and toilets to minimum requirement	ucces,				
27	7	3	If the firing rate of gas burners is		1			
L/	1'		too high it causes short cucling a	hd				
	1	1	excessive fuel consumption Too lo			an a		
			a rate requires constant operating	v .				
	1	1	and delivers inadequate heat to the		1	• • • • • • • • • • • • • • • • • • •		
			shares					
28	7	Δ	Maintain the lowest possible bot wa	ler	1	a a a a a a a a a a a a a a a a a a a		
	1'		temperature which will meet domestic					
			hot water needs.					
	+		· · · · · · · · · · · · · · · · · · ·		+			
	+			+	<u> </u>			
1					<u> </u>			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A	BUILDING NAME		NAME OF ORGANIZATION	
	WEST WOOD PARK SHELTER		CITY OF BLOOMINGTON	10-27-80
	BUILDING ADDRESS		ADDRESS	d
	IUSSS BEARD AVENUE SOUTH	710 0005	CITY WEST UTU SHAKUPEE KUA	
VCT	Bloomington	55431	Bloomington	55431
TA	PERSON COMPLETING FORM	TELEPHONE	CONTACT PERSON	TELEPHONE
DC	Randy Smith	935-6901	Arthur Jensen	881-5811
B	Instructions: For blocks 1 and 2 check the box describes the building type and then within th	which best fits the building the category check off the	g ownership conditions. For block 3 determine whic sub category befitting the building function.	h of the four categories
		3a SCHOOLS	c LOCAL GOVER	NMENT
	ADPublic (PUB)		(SCHL-ELM) Doffice	(LOCG-OFFC)
	UNON-Profit Association (NAP)	Coll. or Univ.	. (SCHL-SECD) Listorage	(LOCG-SERV)
	2 ULTIMATE OWNER	Uvocational	(SCHL-VOCL) ULibrary gency (SCHL-ADMN) DPolice	(LOCG-LBRY) (LOCG-PLCE)
ы В	County (CNTY)		on (SCHL-ADMN) DFire	(LOCG-FIRE)
U U U	UTOWNShip (CITY)	LIOTHER	(SCHL-OTHH) DOTHER	(LUCG-UTHR)
a F	State (STAT)	b. PUBLIC CARE	d. HOSPITALS ne (PBCR-NURS) ⊡General	(HOSP-GENL)
BILI	Private School (PRSC)	Long Term C	Care (PBCR-TERM) Duberculosis	(HOSP TUBR)
	UNon-Profit Association (NPAP) □Indian Tribe (INDN)	DPublic Health	h Ctr. (PBCR-HCTR)	(HOSP-OTHR)
ลี่พี		LRes. Child C	are Ctr. (PBCR-RCCC)	
C	Instructions: With reference to page 23 entitle just Federal funding, then answer the question	d Funding Information, de is correctly for the situatio	etermine if the facilities are eligible for both Feder on. This section must be signed and dated by the he	al and State funding or ead of the organization
1				
	If eligible for both Federal and State Funding:			
1	Have you previously applied for mini-audit f	unding?		
	Do you wish to apply for mini-audit funding	? LIYes XCA No		
	Date		_	
	Nome			
1	Name			
	Signature			
	If eligible for Federal funding only:			
	Have you received a mini-audit grant before			
	Do you wish to apply for mini-audit funding	g? Yes No		
	The 50% match for Federal funds will come	from: (Use additional she	eets if necessary.)	
			• • • • •	
ST				
oue	Date			
RE			-	
NG ND	Name		-	
N.N.	Signature.			
₹2		1994 - 17 - 1991 Altonomou, and a substantia and a substantia and a substantia and a substantia and a substanti	-	

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- □ Elementary School Energy Report (Form No. ED-00444-02) □ Secondary School Energy Report (Form No. ED-00445-02)
- Existing Building Energy Report (Form No. EN-00041-01)

Y REPORT-OFF

ENERGY CHECK-C If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in. I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct OR I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency I am not directly responsible for the day to day operations of this building being audited. I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit. I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building. I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range. Based on actual records, the energy conservation operating and maintenance procedures listed in section K_ did not _save at least (did, did not) 20% of the building's energy consumption as specified in section I. I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria. (should, should not) should not undergo further solar conversion analysis, and/or_ - undergo further analysis of the renewable resources waste (should, should not) wind, wood. (Circle proper resources) In my judgement, as a mini-auditor, all of the above statements are true and correct. Witnessed by: Randv Building Organizational Authority (Print or Type) rint of Type 206 Signature Signature Rieke Carroll Muller Associates, Inc. Firm Name (if none, enter none) Date P.O. Box 130 Address 612-6901 Phone October 27, 1980 Date WINI-AUDIT

F	NAME	POSIT	ION	ORGANIZ	ATION	
	Randy Smith	Certified	Mini-Auditor	Rieke Carroll	Muller Associates,	Inc
	Dave Elzea	Building	Maintenance	City of B	loomington	
		n g ayan ya makan da k <u>a an sa</u> sa kata kata kata ya sa kata sa k				
AUDIT						
G	BRIEF DESCRIPTION OF GET	NERAL BUILDING CONC	DITION (i.e. type, and fun	ction)		
	GOOD, Warming H MAJOR CHANGES PLANNED None	OUSE WITHIN NEXT 15 YEAR	S (i.e. demolition, rehabil	itation, conversion from one	building type to another)	
MATION	STRUCTURAL COMPONENTS Wooden Rafters	S OF ROOF (i.e. metal be	eams, wooden rafters, cor	crete)		
BUILD	ROOFING MATERIAL (i.e. tar Tar and Gravel	and gravel, shingles, tile))			
H	INSTRUCTIONS: Correctly an	swer the following quest	ions for the building bein	g mini-audited.		
	Is there open land adjacent to	the building?		ни инский под наука (разрование на стор		
	Solar collectors need to be loca 3 p.m.? Root: XX yes D No South facing Wall: XX yes	ited in an unshaded area.	Is the roof of the building a	nd the south facing wall unshi	aded between the hours of 9 a.m. an	d
	If the roof or wall are partly sh % of roof unshaded % of south facing wall unsh	naded, what percentage c % aded%	of the surface is unshaded	17		
	What is the overall shape of th A square D rectangle.	ne building?] H-shaped □ E-shape	ed 🛛 other (specify)			
	Is the roof of the building flat	or pitched?	•			
	If pitched, what is the compas	s orientation of the ridge	line? North - S	South		
	If pitched, what is the angle th	hat the roof makes with h	orizontal? <u>15</u>			
	Are there large obstructions o	n the roof such as chimr	neys, rooms for mechanic	al equipment, ventilating uni	is, water towers, etc?	
	What is the exterior facing ma	iterial for the south facin	g wall? Face I	Brick		
	What percentage of the south	facing wall is glass?() %			
	ls the building's space heating .XQ Yes □ No	g equipment located with	in or on the building? (A	no answer indicates the equ	ipment is in a separate building.)	
	If the space heating equipmen XX Ground Floor	nt is inside the building, ment	where is it located? r (specify)			
ENTIAL	ls the building's water heating XX Yes □ No	g equipment located with	in the building? (A no an	swer indicates the equipmen	t is in a separate building.)	
R POT	If the water heating equipmen XIX Ground Floor D Base	nt is inside the building, y ment Other (specify)	where is it located?			
SOLA	Is the water heating system a X₩ Central □ Multiple	central system, does it c Combination	consist of multiple units, o	or is it a combination of the c	entral and multiple units?	

Instructions. Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

		BASE PER	IOD YEAR	Fiscal Year
	ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
	Electricity		· .	
	Fuel 1			1
	Fuel 2			
	TOTAL			L.
		20% SAVIN	GS YEAR	Fiscal Year
	ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
	Electricity			
0	Fuel 1			
	Fuel 2			
DATA	TOTAL			

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

	Check two boxes in each cate	igory —						
	Range of Electrical Savings -	. X 🖄 0%	Xळ _{5%}	□ 10%	0 15%	20%	0 25%	other (specify)
	Range of Fuel Savings	0%	XØ 5%	XØ 10%	0 15%	□ 20%	0 25%	O other (specify)
1								

Calculate ranges of energy and cost savings -

J

1

2

	Range of Electrical Savings								
	Annual Electrical Range of Energy Annual Electrical Range of Electrical % Range Consumption Savings % Range Dollars Spent Dollars Savings								
	lower bound $0 \% \times 11760 \text{ kwh} = 0 \text{ kwh}, 0 \% \times 512.21 = $ 0$								
	to to to to								
	upper bound 5 % x 11760 kwh = 588 kwh, 5 % x $512.21 = 25.61$								
3	Range of Fuel Savings	1							
	Annual Fuel Range of Fuel Annual Fuel Range of Fuel % Range Consumption Savings % Range Dollars Spent Dollars Savings								
	lower bound <u>5</u> % x 2 <u>1.1x10</u> ^f u = 10 <u>.5x10</u> ⁶ Btu, <u>5</u> % x \$ <u>566-20</u> = \$ <u>28,31</u>								
Z	to to to to								
4GS AATIO	upper bound $10_{\%} \times 21_{1,1,1,0}$ btu = $21_{.1,1,1,0}$ btu, $10_{\%} \times 566.20 = 56.62$								
SAVI	The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.	1							

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which is already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location with the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving it which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. section of the mini-audit report should be completed by building personnel prior to the welk-through by the mini-auditor.						
	CLASSIE			OPTIONAL:	OPTIONAL:	i i i i i i i i i i i i i i i i i i i
ITEM NO.	MAJOR	O. SUB	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATIO
	OLHOU	CLASS	· · · · · · · · · · · · · · · · · · ·			
9994 ya 1997 i yang dan sa						
			nine nennengepopolen var syn a syn a syn a samper star en ander en var en de soch ein se en geste gedet. UMA/D1407 .			
			, , , , , , , , , , , , , , , , , , ,			
			το τη την του πολογιστική του που του πολογιστική του μεταλικό του μεταλικό του πολογιστικό του πολογιστικό του Το πολογιστικό του πολογιστικό του πολογιστικό του πολογιστικό του του πολογιστικό του πολογιστικό του πολογιστ			
				Standing and a set of the second s		
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			с.			

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NEW TOPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

}			CATION			
ITEM	N			ENERGY	ENERGY	DATE OF IMPLEMENTATION
NO.	MAJOR	SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	SAVINGS	SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	2	1	Add insulation to ceiling.			
3	2	2	Weatherstrip all exterior doors.			
4	2	8	Caulk all cracks that allow air and moisture into the building.			ana an tao amin'ny faritr'o amin'ny faritr'o dia mampina amin'ny faritr'o dia mampina amin'ny faritr'o dia mampi
5	2	10	Inspect window closing and locking devices to insure a tight window.			
5	2	10	Replace single glazed windows with double glazed thermopanes.			
7	3	1	Check the calibration of all contro and devices for proper settings and operations.	llers		
8	3	1	65°F maximum occupied, 60°F maximum	1		
9	3	1	Consider turning off heat when buil ing is unoccupied for a long period	d-		
10	3	2	Clean and remove obstructions from			
			(diffusers, registers and grillers) They should be kept clean and free).		
			of all dirt and foreign materials.			
11	3	3	Inspect and lubricate bearings on t	fans.		
12	3	3	Inspect drive belts on fans. Adjust or replace as necessary to ensure	t 		
12					ļ	
		3	Inspect tans for normal operation.		ļ	
	ک	3	Seal all leaks by taping and caulk	ing.		
	4		personnel to switch off all lights when they are not needed.			
16	4	3	Clean fixtures and lamps regularly	•		· · ·
17	4	3	Replace lamps in groups before the burn out to maintain higher average	y e		an a
r			light output per fixture.			
18	4	4	Use lower wattage lamps to provide the necessary illumination.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW COPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit peort should be completed by the mini-audit team during the building walk-through.

					OPTIONAL			
ITEM NO.	CLASSIF N MAJOR	ICATION O. SUB	NEW MINI-AUDIT OPPORTUNITIES	ENERGY	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION		
19	CLASS	CLASS 4	Allow part of a lighting system to					
			be turned off while maintaining the					
20					and the second			
20	, s		monthly_energy_consumption_and_pure	hase				
			of any new equipment that affects e consumption of efficiency of the	nergy				
			building. These records will indic the impact of energy conservation	ate				
			measures.	<u>،</u> .				
21	5	1	Review the record books on a regula basis.	r				
22	6	1	Adjust water supply to 100°F.					
23	6	2	The burner system of fossil-fuel wa heaters should be kept clean and in	ter				
			good operating condition.					
24	6	2	Shut down heating equipment when the hot water is not required.	e				
25	7	3	Clean air-sides, remove soot, and	maces				
26	7	3	If the firing rate of gas burners high, it causes short cycling and	is too				
			excessive fuel consumption. Too low	and				
			delivers inadequate heat to the sp	aces.				
27	7	4	Clean filters regularly in forced air units to reduce the operating	warm time				
			of the furnace.					
28	7	4	Turn off gas pilots for furnaces, and space heaters during the non-	boilers				
			heating months and during long uno	ccupied				
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Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A	BUILDING NAME River Ridge Park Shelter		NAME OF ORGANIZATION City of Bloomington	DATE 10-2-80
	BUILDING ADDRESS 2310 E. 88th Street	NAMES AND A STREET A	ADDRESS 2215 West Old Shakopee Ro	ad
ACT	CITY Bloomington, MN	zip code 55431	CITY Bloomington, MN	zip code 55431
CONT	PERSON COMPLETING FORM Randy Smith	TELEPHONE 935-6901	CONTACT PERSON Arthur Jensen	TELEPHONE 881-5811
B	Instructions: For blocks 1 and 2 check the bo describes the building type and then within t	which best fits the build he category check off the	ing ownership conditions. For block 3 determine whic e sub category befitting the building function.	h of the four categories

	1.	OWNERSHIP TYPE XXPublic (F DNon-Profit Association	PUB) (NAP)	3a.	SCHOOLS Elementary Secondary Coll. or Univ.	(SCHL-ELM) (SCHL-SECD) (SCHL-POST)	C.	LOCAL GOVERNMENT	(LOCG-OFFC) (LOCG-STRG) (LOCG-SERV)
ODE	2.	ULTIMATE OWNER	(CNTY) (CITY)		□Vocational □Education Agency □Administration □OTHER	(SCHL-VOCL) (SCHL-ADMN) (SCHL-ADMN) (SCHL-OTHR)		⊔Library □Police □Fire □OTHER	(LOCG-LBRY) (LOCG-PLCE) (LOCG-FIRE) (LOCG-OTHR)
BUILDING ELIGIBILITY CO		☐ Township ☐ State ☐ Public School ☐ Private School ☐ Non-Profit Association ☐ Indian Tribe	(TOWN) (STAT) (PUSC) (PRSC) (NPAP) (INDN)	b.	PUBLIC CARE UNUrsing Home Long Term Care Rehab. Facility Public Health Ctr. Res. Child Care Ctr.	(PBCR-NURS) (PBCR-TERM) (PBCR-RHAB) (PBCR-HCTR) (PBCR-RCCC)	d.	HOSPITALS DGeneral DTuberculosis DOTHER	(HOSP-GENL) (HOSP-TUBR) (HOSP-OTHR)

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding: Have you received a mini-audit grant before? Have you previously applied for mini-audit funding? Do you wish to apply for mini-audit funding? Yes No

Date _

Name: ____

Signature.

If eligible for Federal funding only: Have you received a mini-audit grant before? Have you previously applied for mini-audit funding? Yes No Do you wish to apply for mini-audit funding? The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

51	
EQUES	Date
NG R	Name
IND N	Signature.

Check the type of energy report which was completed and submitted prior to this mini-audit report.

□ Elementary School Energy Report (Form No. ED-00444-02) □ Secondary School Energy Report (Form No. ED-00445-02) ★ Existing Building Energy Report (Form No. EN-00041-01)

D

ENERGY REPORT CHECK-OFF

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

١

I have reviewed the energy report and/or the energy report corrected any misinformation on the energy report which	ort results for this building. I found all information contained therein to be correct OR I have ch will be resubmitted with this mini-audit report to the Minnesota Energy Agency
I am not directly responsible for the day to day operation	ons of this building being audited.
I have fully disclosed my financial interests relating to t	this mini-audit and any energy conservation measures considered by this audit.
I have walked through this building and have found th maintenance changes, and low cost energy conservation	e recommendations listed in section I of this mini-audit report to be the operations a on measures, which would reduce energy consumption in this building.
I have made a rough estimate, in section G, of the range listed in section I. I am not responsible if the actual sav	e of savings which may result from the implementation of all of the mini-audit opportuni rings resulting from this mini-audit do not fall within the estimated range did not
Based on actual records, the energy conservation opera 20% of the building's energy consumption as specified	ating and maintenance procedures listed in section KGrading and maintenance procedures listed in section KGrading and the section I. (did, did not)
Based upon my observation of the physical characteris	tics of this building and the building's major energy using systems, I recommend that
(should, should not) I realize that this is not a final judgement, that the State re	eaun. Serves the right to make the maxi-audit funding determination based on this mini-audit re
and other criteria.	should not
Based upon the information in section E and the informa	tion referred to in section F, I recommend that this building (should a floor (should not)
undergo further solar conversion analysis, and/or	Should not undergo further analysis of the renewable resources w
wind, wood. (Circle proper resources)	
In my judgement, as a mini-auditor, all of the above sta	atements are true and correct.
,, ,	
	With another in
	Witnessed by:
Randy Smith	Witnessed by:
Randy Smith Mini-Auditor's Name (Print or,Type)	Witnessed by: Building Organizational Authority (Print or Type)
Randy Smith Mini-Auditor's Name (Print or Type)	Witnessed by: Building Organizational Authority (Print or Type) 206
Randy Smith Mini-Auditor's Name (Print or Type) Kandy Sudi Signature	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature
Randy Smith Mini-Auditor's Name (Print or Type) Annoly And Signature Picko Cannoll Mullon Accor	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature
Randy Smith Mini-Auditor's Name (Print or Type) Kandy Suga Signature Rieke Carroll Muller Assoc.,	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date
Randy Smith Mini-Auditor's Name (Print or Type) Signature <u>Rieke Carroll Muller Assoc.</u> Firm Name (if none, enter none) DO Down 120	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date
Randy Smith Mini-Auditor's Name (Print or Type) Signature Rieke Carroll Muller Assoc., Firm Name (if none, enter none) PO Box 130 Hopkins, MN 553	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date
Randy Smith Mini-Auditor's Name (Print or Type) Signature <u>Rieke Carroll Muller Assoc.</u> , Firm Name (if none, enter none) <u>PO Box 130 Hopkins, MN 553</u> Address	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date 343
Randy Smith Mini-Auditor's Name (Print or Type) Signature <u>Rieke Carroll Muller Assoc.</u> , Firm Name (if none, enter none) <u>PO Box 130 Hopkins, MN 553</u> Address (612) 935-6901	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date 343
Randy Smith Mini-Auditor's Name (Print or Type) Signature Rieke Carroll Muller Assoc., Firm Name (if none, enter none) PO Box 130 Hopkins, MN 553 Address (612) 935-6901 Phone	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date 343
Randy Smith Mini-Auditor's Name (Print or Type) Signature <u>Rieke Carroll Muller Assoc.</u> Firm Name (if none, enter none) <u>PO Box 130 Hopkins, MN 553</u> Address (612) 935-6901 Phone _September 30, 1980	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date
Randy Smith Mini-Auditor's Name (Print or Type) Kandy Aug Signature Rieke Carroll Muller Assoc., Firm Name (if none, enter none) PO Box 130 Hopkins, MN 553 Address (612) 935-6901 Phone September 30, 1980 Date	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date 343
Randy Smith Mini-Auditor's Name (Print or Type) Kandy Aug Signature Rieke Carroll Muller Assoc., Firm Name (if none, enter none) PO Box 130 Hopkins, MN 553 Address (612) 935-6901 Phone September 30, 1980 Date	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date 343
Randy Smith Mini-Auditor's Name (Print or Type) Kandy Aug Signature Rieke Carroll Muller Assoc., Firm Name (if none, enter none) PO Box 130 Hopkins, MN 553 Address (612) 935-6901 Phone September 30, 1980 Date	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date 343
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Randy Smith Mini-Auditor's Name (Print or Type) Andy Auditor's Name (Print or Type) Signature Rieke Carroll Muller Assoc., Firm Name (if none, enter none) PO Box 130 Hopkins, MN 553 Address (612) 935-6901 Phone September 30, 1980 Date	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date 343
Randy Smith Mini-Auditor's Name (Print or Type) Andy Signature Rieke Carroll Muller Assoc., Firm Name (if none, enter none) PO Box 130 Hopkins, MN 553 Address (612) 935-6901 Phone September 30, 1980 Date	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date 343
Randy Smith Mini-Auditor's Name (Print or Type) Andy Signature Rieke Carroll Muller Assoc., Firm Name (if none, enter none) PO Box 130 Hopkins, MN 553 Address (612) 935-6901 Phone September 30, 1980 Date	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date 243
Randy Smith Mini-Auditor's Name (Print or Type) Andy Signature Rieke Carroll Muller Assoc., Firm Name (if none, enter none) PO Box 130 Hopkins, MN 553 Address (612) 935-6901 Phone September 30, 1980 Date	Witnessed by: Building Organizational Authority (Print or Type) Signature Inc. Date 043
Randy Smith Mini-Auditor's Name (Print or Type) Andy Signature Rieke Carroll Muller Assoc., Firm Name (if none, enter none) PO Box 130 Hopkins, MN 553 Address (612) 935-6901 Phone September 30, 1980 Date	Witnessed by: Building Organizational Authority (Print or Type) Signature Inc. Date 043
Randy Smith Mini-Auditor's Name (Print or Type) Andy Signature Rieke Carroll Muller Assoc., Firm Name (if none, enter none) PO Box 130 Hopkins, MN 553 Address (612) 935-6901 Phone September 30, 1980 Date	Witnessed by: Building Organizational Authority (Print or Type) 206 Signature Inc. Date 443
Randy Smith Mini-Auditor's Name (Print or Type) Signature Rieke Carroll Muller Assoc., Firm Name (if none, enter none) PO Box 130 Hopkins, MN 553 Address (612) 935-6901 Phone September 30, 1980 Date	Witnessed by: 206 Signature Inc. Date

C	NAME	POSITION	ORGANIZATION	
		Contified Mini Auditor	Dicko Connoll Mullon Accoc In	
	Randy Smith	Lertified Mini-Auditor	RIEKE CATTOIL MULLET ASSOC., IN	ι ι .
	Rienert Fae	Maintenance Foreman	Rieke Carroll Muller Assoc., In	ic.
	Kiener u Lye	Hamtenance Forenan		
			1	
EAN				
G	BRIEF DESCRIPTION OF G	ENERAL BUILDING CONDITION (i.e. type, and fu ใดบรค	unction)	
	MAJOR CHANGES PLANNI	ED WITHIN NEXT 15 YEARS (i.e. demolition, rehal	bilitation, conversion from one building type to another)	
z	None			
Ē	STRUCTURAL COMPONEN	TS OF ROOF (i.e. metal beams, wooden rafters, c	oncrete)	
NNO	Wooden Rafters			
PULC PULC	ROOFING MATERIAL (i.e. t	ar and gravel, shingles, tile)		
ēź	lar & Gravel	aanaa waxaa ahaa ahaa ahaa ahaa ahaa ahaa a		
		an ye way way to pay any a second		
H	INSTRUCTIONS: Correctly	answer the following questions for the building be	sing mini-audited.	
	Is there open land adjacent	to the building?		
		control in an unshaded area. In the roof of the buildin	a and the could facing wall unshaded between the hours of 9.8 (i) and	1
	3 p.m.?	Cated in an unshaded area. Is the fool of the building		•
	Roof: XXXYes □ No South facing Wall: XXXY	es 🛛 No		
	li the real or well are perily	shaded what percentage of the surface is upphy	1640	
	% of roof unshaded	snaded, what percentage of the surface is unshad	190 f	
	% of south facing wall un	shaded%		
	What is the overall shape of	the building?		
	Is the root of the building f	lat or pitched?		_
	XXIIat pitched	at or priched?	a.	
	If pitched, what is the comp	bass orientation of the ridgeline?		-
	If nitched what is the angle	e that the roof makes with horizontal?	•	
	Are there lerge chetruction			
	Yes XXNo	s on the root such as chimneys, rooms for mechan	nical squipment, ventilating units, water towers, etc?	
	What is the exterior facing	material for the south facing wall? Fa	ice Brick	
	What percentage of the so-	Ith facing wall is glass? 0		
	Is the building's space her	ting equipment located within or on the building?	(A no answer indicates the equipment is in a senarate building)	
	XXYes INO	ing equipment located within or on the building?	(A no answer indicates the equipment is in a separate outloing.)	
	If the space heating equips	nent is inside the building, where is it located? sement		
INTIAL	Is the building's water hea ∭Yes □ No	ting equipment located within the building? (A no	answer indicates the equipment is in a separate building)	
MATIC	If the water heating equipr	nent is inside the building, where is it located? isement Dother (specify)		
SOLAF	Is the water heating system	n a central system, does it consist of multiple units Combination	s, or is it a combination of the central and multiple units?	

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

	BASE PERI		Fiscal Year
ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2		•	
TOTAL			

		20% SAVING	GS YEAR	Fiscal Year
	ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
	Electricity			
s	Fuel 1			
AVING	Fuel 2			
20% S	TOTAL			

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

Ŷ	Check two boxes in each category						
	Range of Electrical Savings XZ 0%	XX 5%	0 10%	0 15%	20%	25%	other (specify)
	Range of Fuel Savings 0%	XX 5%	XX 10%	0 15%	20%	25%	other (specify)

Calculate ranges of energy and cost savings --

J

2

				(Range of Electrical S	avings				
	• % Ra lower bound	ange % ×	Annual Electrical Consumption 6587 kwh	=	Range of Energy Savings kwh,	% Range 0%	x	Annual Electrical Dollars Spent \$304.14		Range of Electrical Dollars Savings \$
	upper bound	o %i x	6587kwh	=	to 329.4kwh,_	<u>5</u> %	×	<u>\$_304.14</u>	25	\$ ^{15.21}
3					Range of Fuel Sav	lings				
	% R lower bound	ange % x	Annual Fuel Consumption 76.2x10_Btu	=	$\begin{array}{c} \text{Range of Fuel} \\ \text{Savings} \\ 5\\ 38.1 \times 10 \\ \text{Btu,} \end{array}$	% Range %	x	Annual Fuel Dollars Spent <u>\$227.97</u>	<u>-</u> .	Range of Fuel Dollars Savings \$40
4GS AATION	upper bound <u>10</u>	o % ×	76 <u>.2x10⁶віц</u>	=	^{to} 7 <u>6.2х10</u> 5 Вtu, .	10 %	×	<u>\$ 227.97</u>		\$ <u>22.80</u>
SAVIA	The mini-auditor is no not fall between the	ot respons	ible if actual savings re	sultin	g from the implement	tation of the e	merg	y conservation oppor	tunitie	s listed in section I do

section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor. OPTIONAL: OPTIONAL:											
TEM NO.	MAJOR CLASS	SUB CLASS	PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATIO					
1	5	2	Routine maintenance schedule.		an an tao amin'ny taona 270 met 1790 fi an tao amin'ny taona dia mampika amin'ny taona dia mampika amin'ny taon						
2	7	4	Pilot lites turned off during			and the second					
-	†		non heating months.								
	†		an mangan karang dalam dan dari bagi karang dari barang dari barang dari barang dari barang dari barang dari ba K	-							
,			아파 아								
			₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩	+							
<u>-</u> *	+		۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰۰۰ ۲۰								
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NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

	CLASSIFICATION			OF HONAL	ENERGY	An and a section of the
ITEM NO.	MAJOR CLASS	D. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	COST	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	2	1	Add insulation between rafters.	a ya ku y		
3	2	10	Replace single glazed windows with double glazed thermopanes.			
4	2	11	Replace high windows with insulatio wall panels.	1		
5	3	1	Check the calibration of all controllers and devices for proper settings and operations.			
	3	1	65 ⁰ F maximum occupied, 60 ⁰ F maximum unoccupied.			
7	3	1	Consider turning heat off after ice skating season is over.			
8	3	3	Make sure that all fans, frequently inoperative in unit heaters, fan coil units, and unit ventilators are running normally to increase			
			coils.			
9	4	1	Instruct occupants and maintenance personnel to switch off all lights when they are not needed.			
10		2	Clean fixtures and lamps nogularly	<u> </u>		
		5	erean rixeures and ramps regularly.			
11	4	3	Replace lamps in groups before they burn out to maintain higher light output per fixture.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

NEW PPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation and found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.

					OPTIONAL	
	CLASSIF	CATION			ENERGY	
ITEM NO.	MAJOR CLASS	D. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	COST	DATE OF IMPLEMENTATION
12	4	4	Use lower wattage lamps to provide			
			the necessary filumination.			
13	4	4	Allow part of a lighting system			
			the necessary light.			
14	5	1	Keep records of the operating schedule, monthly energy			
			consumption and purchase of any new equipment that affects energy			
			building. These records will			
			conservation measures.			
<u>15</u>	5	1	Review the record books on a regular basis.			
16	6	1	Adjust water supply to 100 ⁰ F.			
17	6	2	All electric heating equipment			
			should be checked for corroded elements and loose connections and repaired as required.			
18	6	2	Periodically drain and remove			
			the sediment.			
19	6	2	Shut down heating equipment when the hot water is not required.			
20	7		Kaan all boot avalandan sunfaces			
20	<u> '</u>	4	clean on unit heaters. Check			a ana ana amin'ny sorana amin'ny sorana amin'ny sorana amin'ny sorana amin'ny sorana amin'ny sorana amin'ny so
			necessary.			
21	7	4	Follow guidelines suggested for			
			tan and motor maintenance.			

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Note 2: Reproduce this page as necessary.