

# The opening process and utilization of child care support home "SHUPOPO" renovated the traditional fork house

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## Abstract

The project recommended to utilize the building stocks as the child care support home has been started to support parents and children in regions and societies since 2002. From the view point of architectural planning, the project is effective to make use of existing building stock. This paper aims to evaluate the space function of the traditional fork house renovated as the child care support home. The opening process of the home, contents of improvement, space function and the utilization are analyzed. It is evaluated that the space function for the child care support home has been prepared by the grant at 2500 thousand yen without changing existing plan. Because of the flexibility of the traditional fork house, mothers and children enjoy the various play by using the toys which can be moved easily. On the other hand, the insulation performance of the traditional fork house is poor, so it is necessary to improve the performance to make the lighting and heating running cost low.

## Key Words

Building Stock / Renovation / the Childcare Support Center / the Project of "Tsudoi-no-Hiroba"

## 1. Introduction

Recently, the declining birthrate, the trend of nuclear family and weakening of the human relations have been progressed, and the family form is changing because many women have come to work in the society. The decline of child care support function in the home and area cause a trouble because mothers who raise a child have no partner to talk about child raising and care. To improve such conditions, the demand to improving the child care support function in the area for the country and local government is increasing, and by supporting child care in the area and the whole society, it is promoted to build the community where parents can raise children peacefully in the familiar place.

On the other hand, in the architectural realm, vacant houses and shops are increasing by the decrease in population of rural area and central city area. The traditional houses are the culture source of the area, and it plays the critical part of landscape formation. But the space composition and equipments do not adapt the modern life-style. As the result, neglected vacant houses are finally pulled down, so the preservation and restoration of tradition house are the important subject.

Toward the change of social conditions like this, Ministry of Health, Labour and Welfare has started "Tsudoi-no-Hiroba" project that is recommended to reuse the

building stock as the child care support home since 2002). Renovation of building stocks enables to open child care support home by low-cost, and parents and children who live in a far area from the public facilities can use the home near their house at outskirts and rural areas without constraint. So, it is valuable to promote child care support closely at local community on small scale. However, it is the important subject to secure enough scale buildings as the child care support homes and to keep the cost of the repair, management and personnel.

In Yamaguchi city of Yamaguchi prefecture, the original project for child care support home has been started since 2005, and the fund for repair and management is aided. The first home that was renovated the traditional fork house and named "Shupopo" has been opened and managed by a local group. In this paper, "Shupopo" is featured as the main subject and the opening process, contents of improvement, space function and utilization are analyzed. The purpose of this study is to evaluate the space function as the child care support home, and the effect and subject of using existing traditional house are cleared.

## 2. The Object and Method of Study

1) Outline of the original project for child care support in Yamaguchi city is explained. Opening process of "Shupopo", repair

Table1. Outline of "Tsudoi-no-Hiroba" in Yamaguchi City

Project Name	The Project of Grant for "Tsudoi-no-Hiroba" in rocal area
Main Role	Local Groups (Residents' association, Social worker, Mother club, etc)
Start Year	2005
Project Contents	<b>1 Grant for Management (Standard money)</b>
	100,000 yen * months which home has opened for a year
	Money for management of the home, Reward, Travel expenses, Demand cost, Charge or Rental cost, Purchase price of furniture
	<b>2 Grant for Management (addition money to take care of children)</b>
	20,000 yen * months which for taking care of children
	Pay for taking care of children, Reward, Travel expenses, Demand cost, Charge or Rental cost, Purchase price of furniture
<b>3 Grant for repair (Just 1st year)</b>	
2,500,000 yen	
	Demand cost, Repair cost, Purchase price of furniture

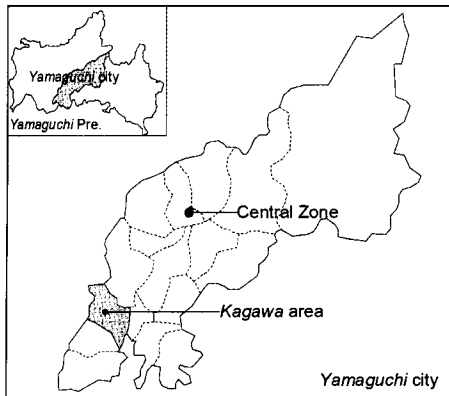


Fig.1 The Chart of the Location

Room	Repair contents	facilities
Play room	Exchange sash door of east side Repaint wall and ceiling Re-cover interior of closet, Repair sill	Air conditioner Oil fan heater
Tea room	Exchange window sash	Refrigerator
Office/Nurse room	Exchange window sash	Air conditioner
Earth floor	Exchange window sash	Washer (used)
Front door	Exchange Sash Door	
Bath		
Toilet		Simple flush toilet Western-style toilet
Roof/Exterior wall	Exchange of roof tiles	
Outside	Prepare sandbox, Put a fence beside water Scrap shed, Parking is prepared by volunteer	

Table.2 Contents of Repair

contents and space structure are examined. (Chapter.3)

2) On the data of investigation of utilization, the characteristics of the scene which a children play with a mother and mothers interchange are grasped. And the space function and repair contents of the home are appreciated. (Chapter.4)

3) Thermal environment of the home is evaluated by the measurement data in summer and winter. (Chapter.5)

4) From the above, Chapter 6 concludes previous chapters and outlines planning subjects of the home renovated traditional folk house.

### 3. The Outline of "Tsudo-no-Hiroba" Project in Yamaguchi City and Opening Process of "Shupopo"

#### 3.1 The Outline of the Project in Yamaguchi City

"Tsudo-no-Hiroba" project coordinated by Ministry of Health, Labour and Welfare has been started since 2003 in Yamaguchi city. A vacant shop located in shopping arcade was renovated as the child care support home in 2003, and the home has been managed by NPO. Next year, Former child's library

inside the city child's center was used for the home under the direct management of local government.

Both homes are located in the central zone of Yamaguchi city though homes are very popular with users. So, mothers who lived in rural area wanted to open the home near their house.

Form the back ground, the local government has started original "Tsudo-no-Hiroba" project since 2005. Outline of the project is shown in table.1. Main role is local groups, for example, resident's' association and social workers. Only first year when the home is opened, 2500 thousand yen is aided for repair cost. And 100 thousand yen is subsidized for management fee every one month. If mothers leave children in the home, the subsidy is 20 thousand yen every month. The home subsidized by local government must be opened for more than three times every week and for more than four hours every day, and it must be kept to manage for more than three years.

#### 3.2 The Opening Process and Space Function

3 groups of the area such as social workers have organized the contact organization for child care support in Yamaguchi City Kagawa area since 2001. It was named "Mirai". After that, the following

activities have been done. ①The information magazine was published. ② The playground map of the area was made. ③ The questionnaire about the playground was sent to mothers in the area. ④ An experimental saloon was opened in community center. "Mirai" has worked on support of child care in the area. The saloon has been opened only two times every month, so mothers hoped a permanent home as a base of child care. From such, the vacant house located near the community center was rented, and it was decided to make use of the house as a child care support home by "Mirai" and locals (Fig.1).

Exactly, those days, the original "Tsudo-no-Hiroba" project of Yamaguchi city has been started, the local group applied for it and was approved as the first home of the project. Improvement was done by subsidy of 2500 thousand yen from the city and 300 thousand yen from the social welfare conference. Table.2 shows contents of repair. Main is exchanging of roof tiles and sash window and repainting wall. The warehouse located in the west side of the house was dismantled by the volunteer, and the parking space was set up there. The home has been opened in July 2005, and managed by the organization composed of local groups such as "Mirai". It was named "Shu-po-po" because children call a train like this in Japanese.

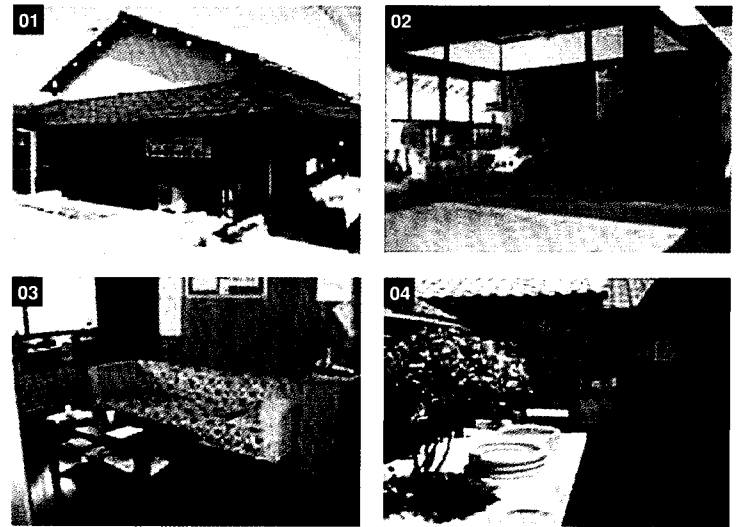
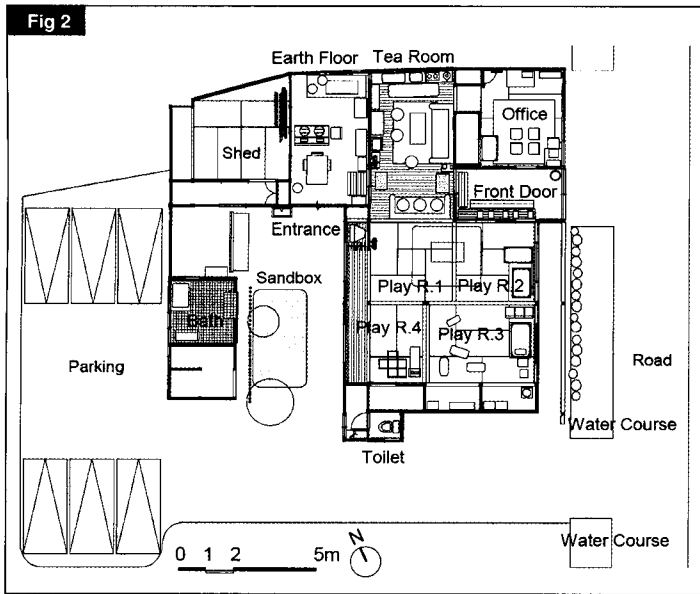


Fig.2 Plan

Photo.1 Exterior / Photo.2 Play Room / Photo.3 Tea Room / Photo.4 Sandbox

Figure.2 shows plan of the home. It is a typical farmhouse of Tanoji-Style plan in this area that has 4 tatami-rooms and Doma-space (Floor space:96.52m<sup>2</sup>)(Photo.1). Because of road in front of existing entrance, an earth floor is used as main entrance. Existing entrance was set up fence between house and the river and used as second entrance. Kitchen is set up 2 sofas, and used for tea room to prepare coffee and snack and talk with visitors (Photo.3). Tatami mat room in the back of tea room is used as office and nursing room. Four tatami-rooms which was removed Fusuma (Japanese fittings) is playground space for mothers and children

(Photo.2). On the floor, three baby beds are set for a nap. When At the lunch time and tea time, a low table is set on the floor. As for the open air, a sandbox was made in the courtyard, and children can play in a pool set there in summer (Photo.4).

The opening hours are from 10:00 to 16:00 in summer, from 10:00 to 15:30 in winter. Mothers and children eat morning snacks, lunch and afternoon snacks together, and other time is free. Some users eat lunch at their house. Use fee is 100 yen per a family as coffee and snacks charge.

**4. Utilization of Child Care Support**

**Home**

**4.1 Summary of Survey and the Number of Users**

The investigation to observe user's and staff's activities was done with the purpose of evaluating the space function of the home. The method of recording users and staffs stay place and contents of behavior in the ground plan in the interval for five minutes was adopted. Investigation carried out six days in 2006.2.21-3.2 and six days in 2006.8.22-9.1.

The number of users during the investigation is shown in the tale.3. In summer, 5-7 children and 8-10 mothers come to the home all day. In winter, there is a difference of the number of users between the morning and the afternoon. 2-3 children and 3-4 mothers visit from the morning till lunch time, in the afternoon, 9 children and 7 mothers appear. It is consider that some users come to the home after they eat lunch in their house. Because a change in the utilization wasn't seen except for the difference in the use number at summer and winter, the characteristics of activities scene are picked up through summer and winter in the next section.

Table.3 Number of visitors in research days

2006 Summer				2006 Winter					
	Mother	Children	Staff		Mother	Children	Staff		
Aug.22	Morning	6	9	3	Feb.21	Morning	4	6	2
	Lunch Time	5	8	3		Lunch Time	3	5	2
	Afternoon	4	4	6		Afternoon	4	6	2
Aug.23	Morning	9	11	7	Feb.22	Morning	3	5	2
	Lunch Time	12	12	5		Lunch Time	1	1	2
	Afternoon	10	11	6		Afternoon	4	8	3
Aug.25	Morning	2	3	11	Feb.24	Morning	2	2	2
	Lunch Time	2	3	4		Lunch Time	5	6	3
	Afternoon	6	8	6		Afternoon	9	10	2
Aug.28	Morning	3	6	4	Feb.28	Morning	1	1	2
	Lunch Time	1	4	5		Lunch Time	1	1	2
	Afternoon	3	8	6		Afternoon	5	5	4
Aug.30	Morning	6	11	4	Mar.1	Morning	4	6	3
	Lunch Time	4	7	3		Lunch Time	6	8	3
	Afternoon	9	14	4		Afternoon	9	11	3
Sep.1	Morning	13	19	5	Mar.3	Morning	2	3	3
	Lunch Time	11	15	4		Lunch Time	4	6	3
	Afternoon	14	20	6		Afternoon	13	18	3
Ave.	Morning	6.5	9.8	5.7	Ave.	Morning	2.7	3.8	2.3
	Lunch Time	5.8	8.2	4.0		Lunch Time	3.3	4.5	2.5
	Afternoon	7.7	10.8	5.7		Afternoon	7.3	9.7	2.8

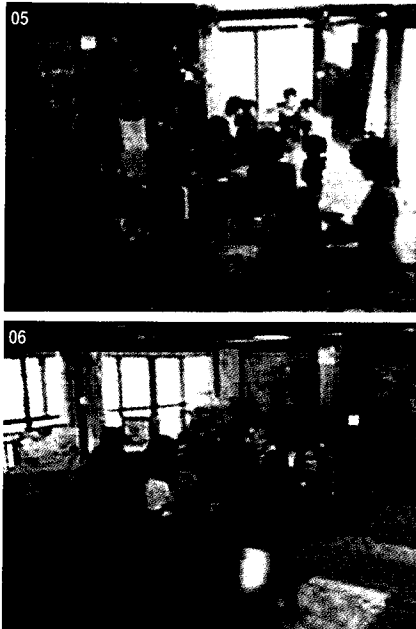
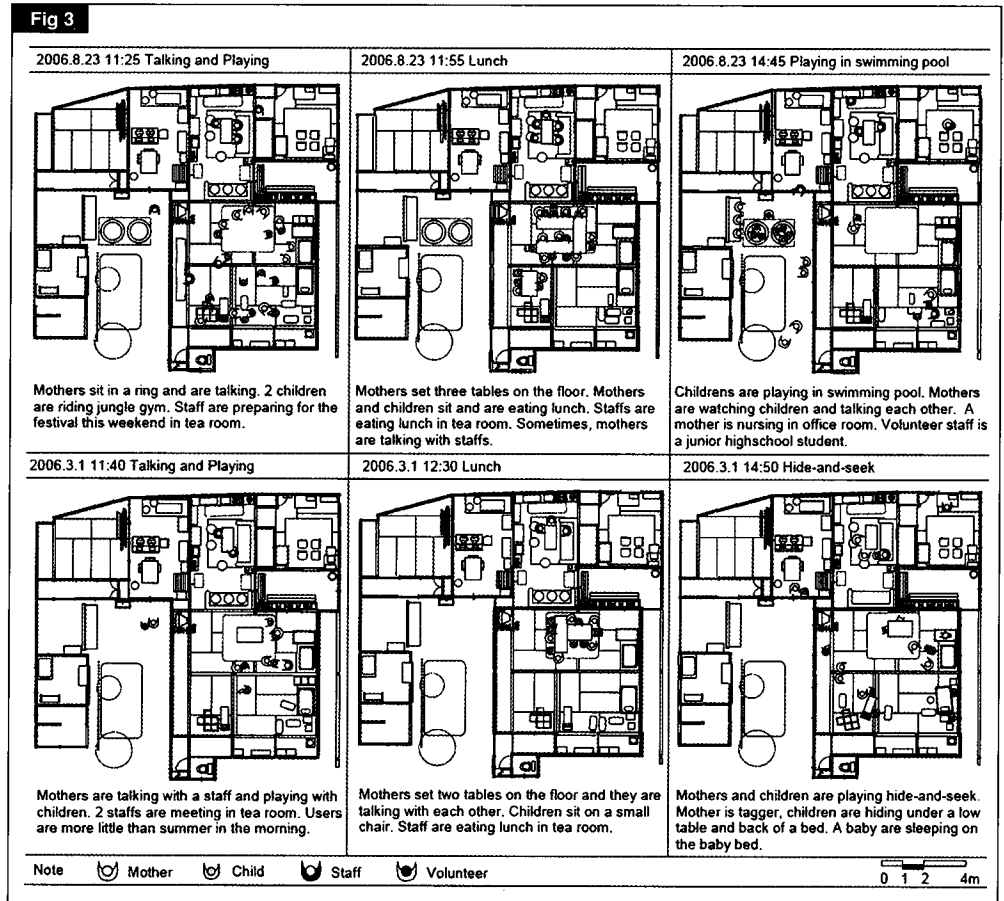


Photo.5 Lunch in Summer

Photo.6 Playing in winter

Fig.3 Utilization in Summer and Winter



### 4.2 The Utilization of the Home

The utilization of mothers and children on August 23rd and March 1st when are the most usual-like day is shown in the figure 3.

Firstly, about summer, 9 mothers and 11 children visit the home around 11 o'clock. Some mothers are sitting in ring and enjoy talking in play room1,2. Others are playing with their child by using toys in play room3, and 2 children are riding a jungle gym in play room4. At lunch time, there are 24 mothers and children. Two low tables are set on the floor of play room1,2,4, they separate from two tables and eat lunch cooked by mothers. Mothers sit on the floor and children sit on the small chair for kids (Photo.5). Staffs eat lunch as they watch mothers and children in tea room and sometimes talk with mothers. In the afternoon, 6 children are swimming in

pool in the courtyard, and mothers are talking each other while they are watching children on the bench. Some children who don't swim are playing with mothers in play room1,3, a mother is using office room to nurse.

Next, about winter, since time when users visit the home is slower than summer, the number of user is a few with 3 mothers and 5 children over 11 o'clock. A staff is playing with children and talking with mothers in play room2. (Photo.6) In lunch, a low table is set on the floor like summer, 5 mothers and 7 children sit around a low table and eat lunch in play room1,2, an electric carpet is laid here in winter. The number of user increase from the afternoon with 8 mothers and 11 children, everyone enjoy playing hide-and-see by using play room1,2,3,4. A mother become a tagger, children are hiding back of

a baby bed, slide and under a low table. The scene that mothers and children play outside isn't seen through winter, so it is thought that outdoor coldness has an influence for their behavior. But it is possible to enjoy outdoor games like hide-and-see if whole play room can be used.

Though there is a difference in the user number in summer and winter, whole play room is used as a playground and lunch space for mothers and children both in summer and winter. Various scenes of the utilization are seen through a day, for example mothers and children play by using toys, a jungle gym, a slide and toy car and play hide-and-see. The courtyard is used as a place to play with water. The scene that staffs and mothers sit on the floor and talk to each other is seen every day, too.

## 5. Evaluation of Heat Environment

The traditional fork house has low insulation performance and problem that it is very cold in winter though summer is cool. As for this case as well, the home has small insulation and airtight capability because the insulation improvement was not done and the window is single glass. In addition, four tatami-rooms were taken off all fusuma to use play rooms, so some air conditioner are necessary to keep the temperature of whole space equally.

The temperature of summer and winter was measured to clear the actual condition of heat environment of the home. Measurement points were the floor surface of all rooms, and the interval was sixty-minute day and night. 2 air-conditioners and an oil fan heater in the play room and an air-conditioner in office were set up and an electric carpet was prepared in the play room, tea room and office.

Figure.4 shows the graph of the temperature change in August 23rd when the weather condition was the most standard in summer. The switch of the air-conditioning was turned on at 11 o'clock, and temperature of the play rooms, a corridor and tea room were kept in 29 degree till the home was closed. On the other hand, the temperature of office was low at 26 degree, the reason is that an air-conditioner was running hard to make

neighboring room (tea room) cool. Although the outside temperature was 33-34 degree, toilet's temperature was higher than the outside after 14 o'clock, especially it was high temperature over 35 degree after 16 o'clock.

Next, the graph of the temperature change in February 24th when the weather condition was the most standard in winter is shown in the figure.5. Since heaters were turned on at 10 o'clock right after the home was opened, the temperature of the play room and tea room were held around 20 degree all day. As for office, the temperature rose more than 24 degree during 14 -15 o'clock because of raising temperature of the air conditioner. In the meanwhile, the corridor temperature of play room was as low as outside temperature, therefore it is shown that insulation performance of corridor is poor. The rest room temperature is high with an influence of the light from the west after 16 o'clock.

Because 3 air conditioners and 1 fan heater are used, a comfortable heat environment is kept in both summer and winter as well whereas the open space composition that fittings were removed. On the other hand, as the insulation performance of existing buildings are low, four heaters and electric carpets must be used to warm the space. Especially, temperature of the office is set up very high. Therefore, the heating cost

of winter must be expensive.

## 6. Conclusions

This paper dealt with the renovation of the traditional fork house as a child care support home and the opening process, repair contents, utilization and heat environment were analyzed. The results are as follows.

- 1) The home was made use of plan's characteristics that the traditional fork house has little room partition. Space function for child care support home is prepared by the grant at 2500 thousand yen without changing existing plan because the space can be expanded by removing the fittings and making use of exist equipments.
- 2) The variation of the utilization in summer and winter was not seen. Mothers and children enjoy the various play by using the toys which can be moved easily, besides lunch space can be prepared by setting tables because of flexibility of the plan. The various scenes of interchange are seen such as mother and child, mothers and mother and staff.
- 3) Although the insulation performance of traditional fork house is poor, the space has been enlarged by transfer of fittings.

Fig.4 Temperature in Summer (2006.8.23)

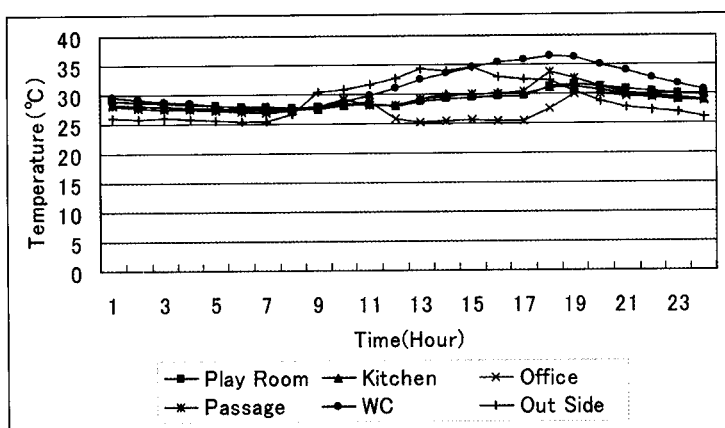
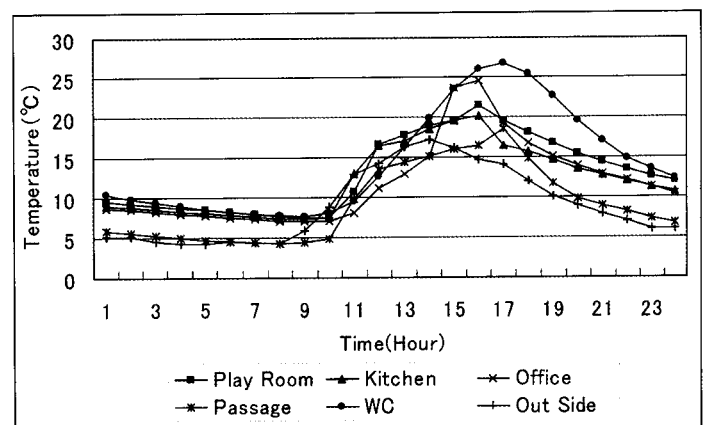


Fig.5 Temperature in Winter (2006.2.24)



Consequently, four heaters have been used to sustain the comfortable room condition, so the running cost of lighting and heating is expensive. It is necessary to restrain the heating fee by low-cost insulation method for wooden house.

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### Note

- 1) Appended table.1 "Tsudoi-no-Hiroba Project"

Project Name	"Tsudoi-no-Hiroba Project"
Start Year	2002
Purpose	To remove responsibilities and anxieties of child raising from parents with babies and infants (0~3years old) and to bring up children of healthy
Contents	1. Interchange between each parents and preparing spots to gather
	2. Advice to worry about child raising by advisers
	3. Information service about child raising in local areas
	4. Classes about child raising and child raising support
Method	Permanent spot for base must be prepared and the place has to be opened more than 5 hours.
The Kind of Spot	Public facilities, vacant shops, community centers, vacant classes of school, facilities for child raising support, flats,
Main Role	Local Government
Grant	Within half of the project cost